

Official Year Book

OF THE

Commonwealth of Australia.

No. 16-1923.




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COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

OFFICIAL

YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA.

No. 16.—1923.

Prepared under Instructions from
The Minister of State for Home and Territories,

BY

CHAS. H. WICKENS, F.I.A., F.S.S., Hon. M.S.S. (Paris),
COMMONWEALTH STATISTICIAN.

Editor : JOHN STONHAM, M.A.

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No. 16-1923

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The Minister of State for Home and Territories

BY

CHAS. H. WICKENS, F.R.S., Hon. M.A. (Oxon.)
COMMONWEALTH STATISTICIAN



PREFACE.

By the Constitution of the Commonwealth of Australia, the Parliament of the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to Census and Statistics." In the exercise of the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The first Official Year Book was published early in 1908. The publication here presented is the sixteenth Official Year Book issued under the authority of the Commonwealth Government.

The synopsis on pp. VIII. to XXIII immediately following shows the general arrangement of the work. It may be noted that certain minor modifications have been introduced in the present volume. For example, the term "Chapter" has been adopted throughout instead of "Section," and it has been found desirable to alter to some extent the order in which the various Chapters are presented. The total number of Chapters has, moreover, been reduced from thirty-one to twenty-seven by grouping certain allied matters in single Chapters. This course has been followed in regard to the previously-existing separate sections dealing with Shipping, Roads and Railways, and Posts, Telegraphs, etc., which have been brought together in Chapter VII., "Transport and Communication," while the three sections relating to Commonwealth, State, and Private Finance respectively have been grouped in Chapter VIII., "Finance." In addition, various matters previously included in Chapter XXVI., "Miscellaneous," are now incorporated in other Chapters, while the section dealing with "Statistical Organization and Sources of Information" has been transferred from the beginning to the end of the book, and appears herein as Chapter XXVII. Wherever circumstances warranted it, the term "Australia" instead of "Commonwealth" has been employed throughout this issue.

In addition to the ordinary Chapters, each issue contains special articles dealing with some particular subject or subjects of more or less permanent interest. These cannot of course be repeated year after year, but in some instances a brief condensation is given in subsequent issues. While portion of the matter contained in Year Books Nos. 1 to 15 has been reduced to synopses or deleted in the present issue, the special index provided at the end of the volume will assist in tracing it in previous issues.

The present issue contains two specially-contributed articles, one dealing with "Australian Hurricanes and Related Storms," which appears in §3, at the end of Chapter II., "Physiography," and the other relating to "Diphtheria," which will be found at the close of Chapter XXV., "Vital Statistics."

Amongst new matter contained in the various Chapters, mention may be made of the conspectus of Factories Acts incorporated in Chapter XIII., "Labour, Wages and Prices." A statement of the matters dealt with, and Acts administered by the various Commonwealth Government Departments has been added to Chapter III., "General Government," while Chapter V., "Land, Tenure and Settlement," has been re-arranged and new matter included.

The full text of the Commonwealth Constitution Act and Amendments appears on pages 20 to 37.

Recent information or returns which have come to hand since the various Chapters were sent to press may be found in the Appendix, p. 1079.

The material contained in each issue is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of improving the Year Book, by those who have been kind enough to point out defects or make suggestions.

My best thanks are due to the State Statisticians, to the responsible officers of the various Commonwealth and State Departments, and to others, who have kindly, and often at considerable trouble, supplied information for this issue.

In conclusion, I wish to express my keen appreciation of the valuable work performed by Mr. Stonham, the editor of the Year Book, and also of the services rendered by the officers in charge of the various branches of the Commonwealth Bureau of Census and Statistics, upon whom has devolved the duty of revising, or in some cases of re-writing the Chapters relative to their respective branches.

CHAS. H. WICKENS,
Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,

Melbourne, 10th October, 1923.

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STATISTICAL SUMMARY.

STATISTICAL SUMMARY, AUSTRALIA, 1871 TO 1922.

Heading.		Years.						
		1871.	1881.	1891.	1901.	1911.	1921.	1922.
Population ..	Males	928,918	1,247,059	1,736,617	2,004,836	2,382,224	2,798,729	2,866,463
	Females	771,970	1,059,677	1,504,368	1,820,077	2,191,644	2,710,440	2,767,029
	Total	1,700,888	2,306,736	3,240,985	3,824,913	4,573,868	5,509,169	5,633,492
Births ..	No.	63,625	80,004	110,187	102,945	122,193	136,198	137,496
	Rate	38.00	35.26	34.47	27.16	27.21	24.95	24.69
Deaths ..	No.	22,175	33,327	47,430	46,330	47,869	54,076	51,311
	Rate	13.24	14.69	14.84	12.22	10.66	9.91	9.21
Marriages ..	No.	11,623	17,244	23,862	27,753	39,482	46,869	44,731
	Rate	6.94	7.60	7.47	7.32	8.79	8.59	8.03
Agriculture—								
Wheat ..	Area, acs.	1,279,778	3,002,064	3,335,528	5,115,965	7,427,834	9,719,042	9,778,610
	Yld., bshl.	11,917,741	21,443,862	25,675,265	38,561,619	71,636,347	129,088,806	109,446,549
	Av. „	9.31	7.14	7.70	7.54	9.64	13.28	11.19
Oats ..	Area, acs.	225,492	194,816	246,129	461,430	616,794	733,406	..
	Yld., bshl.	4,251,630	4,795,897	5,726,256	9,789,854	9,561,833	12,147,433	..
	Av. „	18.85	24.62	23.27	21.22	15.50	16.56	..
Barley ..	Area, acs.	48,164	75,864	68,068	74,511	116,466	298,910	..
	Yld., bshl.	726,158	1,353,380	1,178,560	1,519,819	2,056,836	6,085,685	..
	Av. „	15.08	17.84	17.31	20.40	17.66	20.36	..
Maize ..	Area, acs.	142,078	165,777	284,428	294,849	340,065	305,186	..
	Yld., bshl.	4,576,635	5,726,266	9,261,922	7,034,786	8,939,855	7,840,438	..
	Av. „	32.21	34.54	32.56	23.86	26.29	25.69	..
Hay ..	Area, acs.	303,274	768,388	942,166	1,688,402	2,518,351	2,994,519	..
	Yld., tons	375,871	767,194	1,067,255	2,024,608	2,867,973	3,902,189	..
	Av. „	1.24	1.00	1.13	1.20	1.14	1.30	..
Potatoes(a) ..	Area, acs.	67,911	76,265	112,884	109,685	130,463	149,144	..
	Yld., tons	212,896	243,216	380,477	322,524	301,489	388,091	..
	Av. „	3.13	3.19	3.37	2.94	2.31	2.60	..
SugarCane(d) ..	Area, acs.	11,576	19,708	45,444	86,950	101,010	197,293	..
	Yld., tons	176,632	349,627	737,573	1,367,802	1,682,250	2,436,890	..
	Av. „	15.25	17.74	16.23	15.73	16.65	18.99	..
Vineyards ..	Area, acs.	16,253	14,570	48,882	63,677	60,602	92,414	..
	Wine, gal.	2,104,000	1,488,000	3,535,000	5,816,087	4,975,147	8,562,573	..
Total value all agricul- tural production ..		£ 8,941,000	15,519,000	16,480,000	23,835,000	38,774,000	81,889,700	..
Pastoral, dairying, etc.—								
Live Stock	Sheep No.	40,072,955	65,092,719	106,421,068	72,040,211	93,003,521	82,226,470	..
	Cattle „	4,277,228	8,010,991	11,112,112	8,491,428	11,828,954	14,441,309	..
	Horses „	701,530	1,088,029	1,584,737	1,620,420	2,278,226	2,438,182	..
	Pigs „	586,017	703,188	845,888	931,309	1,110,721	960,385	..
Wool prod., lb. greasy		179,000,000	332,759,000	631,587,000	543,131,661	721,298,288	641,514,435	..
Butter production lbs.		(c)	(c)	47,433,564	101,671,066	211,573,745	267,071,340	..
Cheese „		(c)	(c)	19,146,929	11,575,692	15,886,712	32,653,003	..
Bacon and ham „		(c)	(c)	(c)	34,020,629	53,264,652	58,614,459	..
Total estimated value of pastoral and dairying production ..		£ 20,736,000	29,538,000	39,256,000	36,890,000	69,832,000	113,671,000	..
Mineral production—								
Gold ..	£	7,916,627	5,194,390	5,281,309	14,017,508	10,551,624	4,018,685	3,545,173
	Silver and lead	£ 36,528	45,622	3,736,352	2,367,687	3,022,177	1,539,992	3,014,301
	Copper ..	£ 830,242	714,003	367,373	2,215,431	2,564,278	803,957	844,126
	Tin ..	£ 24,020	1,145,889	560,502	448,234	1,209,973	418,418	395,755
	Zinc ..	£ 369	200	2,979	4,067	1,415,169	283,455	1,157,458
	Coal ..	£ 330,759	637,865	1,914,026	2,602,770	3,929,673	11,014,831	10,486,419
Total value all mineral production ..		9,190,330	7,820,290	12,108,759	21,922,665	23,494,324	19,977,384	20,316,160
Forestry production— Quantity of local tim- ber sawn or hewn 1,000 sup. ft.		(c)	(c)	(c)	452,131	604,794	590,495	..
Manufactories—								
No. of factories ..	..	(b)	(b)	(b)	(b)	14,455	18,023	..
	Hands employed No.					311,710	395,425	..
	Wages paid £					27,528,371	68,050,861	..
	Total value of output £					133,022,090	320,331,765	..
	Value added in process of manufacture £					54,017,714	129,921,500	..

(a) Partly estimated 1871 and 1881. (b) Owing to variation in classification and lack of information effective comparison is impossible. (c) Information not available. (d) Area of productive cane.

STATISTICAL SUMMARY.

XXV

STATISTICAL SUMMARY.—AUSTRALIA, 1871 TO 1922—continued.

Heading.	Years.						
	1871.	1881.	1891.	1901.	1911.	1921.	1922.
Shipping—							
Oversea vessels { No. 2,748		3,284	3,778	4,028	4,174	3,674	3,111
ent. & cleared { ton. 1,312,642		2,549,364	4,726,307	6,541,991	9,984,801	9,503,018	9,081,278
Commerce (c)—							
Imports oversea £ 17,017,000		29,067,000	37,711,000	42,434,000	66,967,488	103,066,436	131,808,673
„ per head £ 10/3/3		12/16/2	11/16/0	11/3/11	14/18/2	18/14/1	23/7/10
Exports oversea £ 21,725,000		27,528,000	36,043,000	49,696,000	79,482,258	127,846,535	117,913,083
„ per head £ 12/19/6		12/2/8	11/5/6	13/2/2	17/13/10	23/4/1	20/18/7
Total oversea trade £ 38,742,000		56,595,000	73,754,000	92,130,000	146,449,746	230,912,971	249,721,756
„ per head £ 23/2/9		24/18/10	23/1/6	24/6/1	32/12/0	41/18/2	44/6/5
Customs and excise duties £ ..		4,809,326	7,440,869	8,656,530	13,515,005	27,565,199	32,872,288
„ per head, £ ..		2/2/5	2/6/7	2/5/8	2/19/2	5/0/1	5/16/8
Principal Oversea Exports (a)—							
Wool { lbs. (greasy) 176,635,800		328,369,200	619,259,800	518,018,100	720,364,900	927,833,700	823,890,700
£ 9,459,629		13,173,026	19,940,029	15,237,454	26,071,193	47,977,044	57,241,611
Wheat { centals 479,954		3,218,792	5,876,875	12,156,035	33,088,704	59,968,334	18,906,163
£ 193,732		1,189,762	1,938,864	2,774,643	9,641,608	28,644,155	8,469,574
Flour { tons 12,988		49,549	33,363	96,814	175,891	359,734	394,503
£ 170,415		519,635	328,423	589,604	1,391,529	5,519,881	4,521,976
Butter { lbs. 1,812,700		1,298,800	4,239,500	34,607,400	101,722,100	127,347,400	78,975,400
£ 45,813		39,383	206,868	1,451,168	4,637,362	7,968,078	6,082,414
Skins and hides £ 100,123		316,878	873,695	1,250,938	3,227,236	3,136,810	6,672,871
Tallow .. £ 914,278		644,149	571,069	677,745	1,935,836	1,441,795	1,635,123
Meats .. £ 566,780		362,965	460,894	2,611,244	4,303,159	5,542,102	7,673,843
Timber (undressed) £ 42,586		118,117	38,448	731,301	1,023,960	1,158,166	1,025,619
Gold .. £ 7,184,833		6,445,365	5,703,532	14,315,741	12,045,766	3,483,239	2,219,331
Silver and lead £ 37,891		57,954	1,932,278	2,250,253	3,212,584	2,583,641	3,678,161
Copper .. £ 598,538		676,515	417,687	1,619,145	2,345,961	705,358	664,278
Coal .. £ 134,355		361,081	645,972	986,957	900,622	1,099,899	1,200,167
Govt. Railways—							
Lgth. of line open, mls. 970		3,832	9,541	12,579	16,078	23,296	23,497
Capital cost £ 19,269,786		42,741,350	99,764,090	123,223,779	152,194,603	237,479,693	244,353,223
Gross revenue £ 1,102,650		3,910,122	8,654,085	11,038,468	17,847,837	35,936,900	38,194,630
Working expenses £ 608,322		2,141,735	5,630,182	7,133,617	10,945,727	29,969,954	29,817,970
Per cent. of work'g expenses on earnings % 55.17		54.77	65.06	64.63	61.33	83.39	78.07
Postal—							
Letters and postcards dealt with No. 24,382,000		67,640,000	157,297,000	220,853,000	453,063,000	569,343,456	561,973,105
„ per head „ 14.54		29.61	49.07	58.26	100.90	104.36	100.93
Newspapers dealt with No. 3,336,000		38,063,000	85,280,000	102,727,000	141,638,000	130,882,425	140,477,124
„ per head „ 7.95		16.66	26.61	27.10	31.54	23.99	25.23
Cheque-paying Banks—							
Note circulation £ 2,456,487		3,978,711	4,417,269	3,406,175	876,4286	211,187	207,555
Coin & bullion held £ 6,168,869		9,108,243	16,712,923	19,737,572	30,024,225	22,092,371	22,007,040
Advances £ 26,039,573		57,732,824	129,741,583	89,167,499	116,769,133	233,214,626	248,818,737
Deposits £ 21,856,959		53,849,455	98,345,338	90,965,530	147,103,081	273,866,737	301,215,730
Savings Banks—							
Number of depositors 100,713		250,070	614,741	964,553	1,600,112	3,327,456	3,541,916
Total deposits £ 3,193,285		7,854,480	15,536,592	30,882,645	59,393,682	154,396,051	164,074,070
Aver. per depositor £ 31/14/2		31/8/2	25/5/6	32/0/4	37/2/4	46/8/0	46/6/6
„ population head of £ 1/18/9		3/10/5	4/18/7	8/3/0	13/8/5	28/0/4	28/19/6
State Schools—							
Number of schools .. 2,502		4,494	6,231	7,012	8,060	9,445	..
Teachers .. No. 4,641		9,028	12,564	14,500	16,971	26,120	..
Enrolment .. 236,710		432,320	561,153	638,478	638,850	819,042	..
Aver. attendance „ 137,767		255,143	350,773	450,246	463,799	666,498	..

(a) Australian produce, except gold, which includes re-exports. (b) Decrease due to prohibition of re-issue
(c) Figures for Commerce for years 1921 and 1922 relate to year ended 30th June following.

CHRONOLOGICAL TABLE.

CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

NOTE.—The Government was centralized in Sydney, New South Wales, up to 1825, when Tasmania (Van Diemen's Land) was made a separate colony. In the Table, the names now borne by the States serve to indicate the localities.

Year.

- 1788 N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Port Jackson taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Branch settlement established at Norfolk Island. French navigator Lapérouse visited Botany Bay. First cultivation of wheat and barley. First grape vines planted.
- 1789 N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
- 1790 N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First circumnavigation of Australia by Lieut. Ball.
- 1791 N.S.W.—Arrival of "Third Fleet." Territorial seal brought by Governor King.
- 1792 N.S.W. Visit of *Philadelphia*, first foreign trading vessel.
- 1793 N.S.W.—First free immigrants arrived in the *Bellona*. First Australian church opened at Sydney. Tas.—D'Entrecasteaux discovered the Derwent River.
- 1794 N.S.W.—Establishment of settlement at Hawkesbury River.
- 1795 N.S.W.—Erection of the first printing press at Sydney. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
- 1796 N.S.W.—First Australian theatre opened at Sydney. Coal discovered by fishermen at Newcastle.
- 1797 N.S.W.—Introduction of merino sheep from Cape of Good Hope.
- 1798 Tas.—Insularity of Tasmania proved by voyage of Bass and Flinders.
- 1800 N.S.W.—First export of coal. First Custom House in Australia established at Sydney. Flinders' charts published.
- 1801 N.S.W.—First colonial manufacture of blankets and linen.
- 1802 Vic.—Discovery of Port Phillip by Lieut. Murray. S.A.—Discovery of Spencer's and St. Vincent Gulfs by Flinders. Q'land.—Discovery of Port Curtis and Port Bowen by Flinders.
- 1803 N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first Australian newspaper. Vic.—Attempted colonization of Port Phillip by Collins. Discovery of Yarra by Grimes. Tas.—First settlement formed at Risdon by Lieut. Bowen.
- 1804 N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Collins, and at Yorktown by Colonel Paterson.
- 1805 N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of convicts from Norfolk Island transferred to Tasmania.
- 1806 N.S.W.—Shortage of provisions. Floods. Tas.—Settlement at Launceston.
- 1807 N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool (245 lbs.) to England.
- 1808 N.S.W.—Deposition of Governor Bligh.
- 1810 N.S.W.—First post-office established at Sydney. First race meeting in Australia at Hyde Park, Sydney. Tas.—First Tasmanian newspaper printed.
- 1813 N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland. Macquarie River discovered by Evans.
- 1814 N.S.W.—Australia, previously known as "New Holland," received present name on recommendation of Flinders. Creation of Civil Courts.

Year.

- 1815 N.S.W.—Town of Bathurst founded by Governor Macquarie. First steam engine in Australia erected at Sydney. Lachlan River discovered by Evans. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney.
- 1816 N.S.W.—Botanic Garden formed at Sydney.
- 1817 N.S.W.—Oxley's first exploration inland. Discovery of Lakes George and Bathurst and the Goulburn Plains by Meehan and Hume. First bank in Australia opened at Sydney.
- 1818 N.S.W.—Cessation of free immigration. Liverpool Plains, and the Peel, Hastings, and Manning Rivers discovered by Oxley, and Port Essington by Captain King.
- 1819 N.S.W.—First Australian Savings Bank opened at Sydney.
- 1820 Tas.—First importation of pure merino sheep.
- 1821 Tas.—Establishment of penal settlement at Macquarie Harbour.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Qld.—Brisbane River discovered by Oxley.
- 1824 N.S.W.—Erection into Crown Colony. Executive Council formed. Establishment of Supreme Court at Sydney, and introduction of trial by jury. First Australian Enactment (Currency Bill) passed by the Parliament at Sydney. Proclamation of freedom of the press. First manufacture of sugar. Vic.—Hume and Hovell, journeying overland from Sydney, arrived at Corio Bay. Qld.—Penal settlement founded at Moreton Bay (Brisbane). Fort Dundas Settlement formed at Melville Island, N. Terr.
- 1825 Tas.—Separation of Van Diemen's Land (Tasmania).
- 1826 N.S.W.—Settlement in Illawarra District. Vic.—Settlement at Corinella, Western Port, formed by Captain Wright. W.A.—Military Settlement founded at King George's Sound, Albany, by Major Lockyer.
- 1827 N.S.W.—Colony became self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs and the Condamine River discovered by Allan Cunningham.
- 1828 N.S.W.—Second constitution. First Census. Sturt's expedition down Darling River. Cotton first grown in Sydney Botanical Gardens. Gas first used at Sydney. Richmond and Clarence Rivers discovered by Captain Rous. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovered a route from Brisbane to the Darling Downs, and explored Brisbane River to its source.
- 1829 N.S.W.—Sturt's expedition down Murrumbidgee River. W.A.—Foundation of settlement at Swan River. Foundation of Perth.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Sturt, voyaging down Murrumbidgee and Murray Rivers, arrived at Lake Alexandrina. Tas.—Trouble with natives. Black line organized to force aborigines into Tasman's Peninsula, but failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement on Flinders Island.
- 1831 N.S.W.—Crown lands first disposed of by public competition. Mitchell's explorations north of Liverpool Plains. Arrival at Sydney of first steamer, *Sophia Jane*, from England, S.S. *Surprise*, first steamship built in Australia, launched at Sydney. First coal shipped from Australian Agricultural Company's workings at Newcastle, N.S.W. First assisted immigration to N.S.W. S.A.—Wakefield's first colonization committee. W.A.—Appointment of Executive and Legislative Councils.
- 1832 N.S.W.—Savings Bank of N.S.W. established.
- 1833 N.S.W.—First School of Arts established at Sydney.
- 1834 N.S.W.—First settlement at Twofold Bay. Vic.—Settlement formed at Portland Bay by Henty Bros. Qld.—Leichhardt reached Gulf of Carpentaria. S.A.—Formation of the South Australian Association. W.A.—Severe reprisals against natives at Pinjarrah.
- 1835 N.S.W.—Establishment of depot at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman arrived at Port Phillip; made treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawcner founded Melbourne.
- 1836 N.S.W.—Mitchell's overland journey from Sydney to Cape Northumberland, Vic., "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. S.A.—Settlement founded at Adelaide under Governor Hindmarsh.

Year.

- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Vic.—Melbourne planned and named by Governor Bourke. First Victorian post-office established in Melbourne. First overlanders from Sydney arrived at Port Phillip. S.A.—Adelaide planned by Captain Light.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Drought and failure of crops. Frenzied speculation. Qld.—Settlement of German missionaries at Brisbane. S.A.—“Overlanding” of cattle from Sydney to Adelaide along the Murray route by Hawden and Bonney. Settlement at Port Essington, Northern Territory, formed by Captain Bremer.
- 1839 N.S.W.—Gold found at Vale of Clwydd by Count Strzelecki. S.A.—Lake Torrens discovered by Eyre. Port Darwin discovered by Captain Stokes. W.A.—Murchison River discovered by Captain Grey.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Monetary crisis. Vic.—Determination of northern boundary. Qld.—Penal settlement broken up and Moreton Bay district thrown open. S.A.—Eyre began his overland journey from Adelaide to King George’s Sound.
- 1841 N.S.W.—Gold found near Hartley by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre’s overland journey from Adelaide to King George’s Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne. S.A.—Discovery of copper at Kapunda.
- 1843 N.S.W.—First Representative Constitution. First manufacture of tweed. Financial crisis. Qld.—Moreton Bay granted legislative representation.
- 1844 S.A.—Sturt’s last expedition inland. Qld.—Leichhardt’s expedition from Condamine River to Port Essington.
- 1845 N.S.W.—Mitchell’s explorations on the Barcoo. Qld.—Explorations by Mitchell and Kennedy. S.A.—Discovery of the Burra copper deposits. Sturt discovered Cooper’s Creek.
- 1846 N.S.W.—Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Foundation of New Norcia Mission.
- 1847 N.S.W.—Iron smelting commenced near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City. Qld.—Explorations by Leichhardt, Burnett, and Kennedy.
- 1848 Qld.—Leichhardt’s last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds.
- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—Randolph prevented from landing convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. Vic.—Gold discovered at Clunes by Hon. W. Campbell. Representative government granted. S.A.—Representative government granted. W.A.—Pearl oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted.
- 1851 N.S.W.—Payable gold discovered by Hargraves at Lewis Ponds and Summerhill Creeks. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold in various localities. “Black Thursday,” 6th Feb., a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. W.A.—Proclamation of Legislative Council Act.
- 1852 N.S.W.—Destruction of Gundagai by flood—77 lives lost. Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Tas.—Abolition of transportation.
- 1854 N.S.W.—Russian war-scare and volunteer movement. Vic.—Opening of first Victorian railway—Flinders-street to Port Melbourne. Riots on Ballarat goldfields. Storming of the Eureka Stockade, 3rd Dec.

Year.

- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Mint opened. Vic.—Proclamation of Constitution. Qld.—Gregory's expedition in search of Leichhardt. Tas.—Responsible government introduced.
- 1856 N.S.W.—First elective Parliament. Pitcairn Islanders placed on Norfolk Island. S.A.—Responsible government introduced. W.A.—A. C. Gregory's expedition in search of Leichhardt.
- 1857 N.S.W.—Heavy floods. Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. Vic.—Manhood suffrage established. S.A.—Passage of Torrens' Real Property Act.
- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney, Melbourne, and Adelaide. Qld.—Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, via Circular Head and King Island, to Cape Otway.
- 1860 N.S.W.—Disastrous floods on the Shoalhaven and at Araluen. Vic.—Burke and Wills left Melbourne on their journey across Continent. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong goldfields. Opening of first tramway in Sydney. Regulation of Chinese immigration. Vic.—Burke and Wills perished at Cooper's Creek, near Innamincka, S.A.
- 1862 N.S.W.—Raid by bushrangers on the Lachlan gold escort (£14,000 taken), Abolition of State aid to religion. Real Property Act. S.A.—Stuart crossed the Continent from south to north. W.A.—Severe floods—damage to property, £30,000. First export of pearl-shell.
- 1863 Vic.—Intercolonial conference at Melbourne. S.A.—Northern Territory taken over. W.A.—Initiation of settlement in the North-west district.
- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun and opened. First sugar made from Queensland cane. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. Qld.—Financial crisis. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. W.A.—Arrival of the *Hougomont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 N.S.W.—Establishment of Eskbank Iron Company. W.A.—First telegraph line opened from Perth to Fremantle.
- 1870 N.S.W.—Intercolonial Exhibition opened at Sydney. Imperial troops withdrawn. Vic.—Intercolonial Congress at Melbourne. S.A.—Commencement of transcontinental telegraph.
- 1871 N.S.W.—Permanent military force raised. Vic.—Increase of protective duties. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Vic.—Mint opened. S.A.—Cable from Java to Port Darwin. Completion of transcontinental telegraph line. W.A.—Cyclonic storms—destruction of town of Roebourne.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco.
- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. W.A.—John and Alexander Forrest arrived at Overland Telegraph from Murchison.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island. S.A.—Wreck of the *Gothenburg*—Judge Wearing and other well-known Adelaide citizens drowned.
- 1876 N.S.W.—Completion of cable—Sydney (La Perouse) to Wellington (Wakapuaka). W.A.—Violent gale at Exmouth Gulf, number of pearling vessels wrecked, 69 lives lost. Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.
- 1877 W.A.—Opening of telegraphic communication with South Australia.
- 1878 N.S.W.—Seamen's strike. Vic.—"Black Wednesday"—wholesale dismissal of civil servants. Qld.—Restriction of Chinese immigration.

Year.

- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. W.A.—A. Forrest's explorations in the Kimberley district, and discovery of the Fitzroy pastoral country.
- 1880 N.S.W.—Public Instruction Act passed. Vic.—Opening of first Victorian International Exhibition at Melbourne.
Federal Conference, at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. W.A.—Cyclone near Roebourne wrecked number of pearling vessels. On the Ashburton, 1,000 sheep destroyed by cyclone.
Visit to Australia of T.R.H. Prince Albert Victor and Prince George of Wales.
- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roebourne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities.
Federal Conference held at Sydney. Federal Council created.
- 1884 Federation Bill passed in Victoria and rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Sudan. Opening of the Broken Hill Proprietary Silver Mines. W.A.—Gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district Tas.—Silver-lead discovered at Mount Zeehan.
- 1886 N.S.W.—Wreck of the *Ly-ee-Moon*, *Coringamite*, and *Helen Nicol*. Tas.—Discovery of gold and copper at Mount Lyell.
First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (81 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Southern Cross.
Australasian Conference in London. Australasian Naval Defence Force Act passed.
- 1888 N.S.W.—Centennial celebrations. Restrictive legislation against Chinese, imposing poll-tax of £100. Vic.—Second Victorian International Exhibition held at Melbourne. Qld.—Railway communication opened between Sydney and Brisbane.
Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney.
- 1889 Qld.—Direct railway communication established between Brisbane and Adelaide. W.A.—Framing of new Constitution.
- 1890 N.S.W.—Strike at Broken Hill. Maritime and shearers' strikes. Payment of members of Parliament. Qld.—Wreck of the *Quetta*—146 lives lost. Floods and hurricanes. W.A.—Responsible government granted.
Meeting at Melbourne of Australasian Federation Conference.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Cessation of assisted immigration. W.A.—Discovery of gold on the Murchison.
Federal Convention in Sydney: draft bill framed and adopted.
- 1892 N.S.W.—Broken Hill miners' strike. Run on Government Savings Bank. W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Electoral Act—"One man one vote." Financial crisis, chiefly affecting the eastern States.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill.
- 1895 N.S.W.—Free-trade tariff. Land and income taxes introduced.
Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—People's Federal Convention at Bathurst.
- 1897 S.A.—Earthquake and hurricane in Northern Territory. Town of Palmerston destroyed.
- 1897–8 Sessions of Federal Convention at Adelaide, Sydney, and Melbourne.
- 1898 N.S.W.—First surplus of wheat for export.
Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales.

Year.

- 1899 First contingent of Australian troops sent to South Africa. Conference of Premiers in Melbourne to consider amendments to Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age pensions instituted.
Contingents of naval troops sent to China.
Commonwealth Constitution Act received Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton formed first Federal Ministry.
- 1901 Vic.—Old-age Pensions instituted.
Proclamation of the Commonwealth at Sydney. First Federal Parliament opened at Melbourne by the Duke of Cornwall and York. Interstate free-trade established.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. W.A.—Opening of pumping station at Northam in connexion with Goldfields water supply.
First Federal Tariff.
- 1903 Vic.—Railway Strike (Enginemmen). W.A.—Coolgardie and Kalgoorlie water supply scheme completed.
Inauguration of the Federal High Court.
- 1905 N.S.W.—Re-introduction of assisted immigration.
- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Papua taken over by Commonwealth.
- 1907 N.S.W.—Telephone, Sydney to Melbourne, opened.
Imperial Conference in London.
- 1908 Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £126,000.
Yass-Canberra chosen as site of Federal Capital. Interstate Premiers' Conference at Melbourne.
- 1909 N.S.W.—Miners' strikes at Broken Hill and Newcastle. S.A.—*Clan Ranald* foundered in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.
Imperial Defence Conference in London—Commonwealth ordered two destroyers and one first-class cruiser for fleet unit. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah* with 300 passengers and crew.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid, £129,000. W.A.—Cyclone at Broome—several pearling vessels wrecked, three whites and many coloured fishermen drowned.
Referendum on financial relations between the Commonwealth and the States. Penny postage. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act passed and first Commonwealth notes issued. Admiral Sir R. Henderson visited Australia to advise on naval defence.
- 1911 First Federal Census. Transfer of Northern Territory to Commonwealth. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire.
- 1912 Opening of Commonwealth Bank. First payments of Maternity Bonus. First sod turned at Port Augusta of Trans-Australian Railway (Port Augusta to Kalgoorlie). Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W.
- 1913 Arrival of battle cruiser *Australia*, and cruisers *Melbourne* and *Sydney*. Federal Capital named Canberra and foundation stone laid. Appointment of Interstate Commission.
- 1914 Visit of General Sir Ian Hamilton to report on military defence scheme. Double dissolution of Federal Parliament. Visit of British Association for the Advancement of Science.
European War. Australian Navy transferred to Imperial Navy. Captured vessels added to Australian fleet. Submarine *AE1* lost at sea whilst on service in the vicinity of New Britain. German Pacific possessions seized by Australian expeditionary force (military and naval). Australian troops offered to, and accepted by Imperial Government. German Cruiser *Emden* destroyed at North Cocos Island by H.M.A.S. *Sydney*.

- Year.
- 1915 Opening of Broken Hill Proprietary's Ironworks at Newcastle, N.S.W. Navy Department created. Australian troops landed at Dardanelles on 25th April. Loss of Submarine AE2 in operations at the Dardanelles. Census taken of Wealth and Income, and of males in Australia between ages of 17 and 60. Australian troops withdrawn from Gallipoli on 19th December.
- 1916 Record wheat harvest (180,000,000 bushels). Australian troops transferred to France. Visit of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister, to Canada, Great Britain, and South Africa, and to troops in England and France. Acquisition of steamships by the Commonwealth. First Military Service Referendum.
- 1917 National Ministry formed. General strike. Kalgoorlie-Port Augusta railway completed. Second Military Service Referendum.
- 1918 Population of Australia reaches 5,000,000. Australian troops in France formed into an Army Corps, commanded by Lieut.-Gen. Sir John Monash. Cessation of hostilities and surrender of Germany. Repatriation Department created. Australia House (Strand, London) opened by the King. Deaths of Sir G. H. Reid and of Lord Forrest of Bunbury.
- 1918-1919 Visit to America and Europe of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister, representative at Peace Conference.
- 1919 Epidemic of influenza. Seamen's strike. Strike of Broken Hill miners. Aerial flight England to Australia by Capt. Sir Ross Smith and Lieut. Sir Keith Smith. Death of Hon. Alfred Deakin. Visit to Australia of General Sir W. Birdwood. Visit of Admiral Lord Jellicoe.
- 1920 Visit to Australia of H.R.H. the Prince of Wales. Aerial flight England to Australia by Lieuts. Parer and McIntosh. Deaths of Rt. Hon. Sir Edmund Barton and of Rt. Hon. Sir Samuel Griffith.
- 1921 Visit to Imperial Conference of Rt. Hon. W. M. Hughes, P.C., K.C., Prime Minister. Second Commonwealth Census. Germany's Indemnity fixed (Australia's share approximately £63,000,000). Visit of Senator Pearce (Minister for Defence) to Disarmament Conference at Washington. Colliery disaster at Mt. Mulligan, Queensland—76 lives lost. Mandate given to Australia over Territory of New Guinea. First direct wireless press message, England to Australia.
- 1922 Economic Conference at Sydney. First lock on River Murray opened at Blanchetown, South Australia.

OFFICIAL YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA, 1922,

AND EARLIER YEARS.

CHAPTER I.

DISCOVERY, COLONIZATION, AND FEDERATION OF AUSTRALIA.

§ 1. Early Knowledge of Australia.

1. **Introduction.**—It is proposed to give here only a brief summary of the more important facts relating to the early history of Australian discovery. A more complete account of this subject, together with bibliographical references thereto, may be found in Year Book No. 1 (pp. 44 to 51), although this account must be modified somewhat in view of later investigations.

2. **Early Tradition.**—It would appear that there was an early Chaldean tradition as to the existence of an Austral land to the south of India. Rumours to that effect in course of time found their way to Europe, and were probably spread by voyagers from Indian seas, more especially by the Greek soldiers who accompanied Alexander the Great [B.C. 356–323] to India. References to this *Terra Australis* are found in the works of Ælianus [A.D. 205–234], Manilius [probably a contemporary of Augustus or Tiberius Cæsar], and Ptolemy [A.D. 107–161]. In some of the maps of the first period of the Middle Ages there is evidence which might warrant the supposition of the knowledge of the existence of a *Terra Australis*, while some idea of the Austral land appears in the maps and manuscripts of the fourteenth and fifteenth centuries. It must be admitted, however, that much of the map-drawing in these early days was more or less fanciful, and there is no evidence definitely connecting this so-called *Terra Australis* with Australia.

3. **Discovery of Australia.**—(i) *General.* The Venetian traveller, Marco Polo [1254–1324], refers to a land called Locac, which through a misunderstanding of his meaning was long thought to be Australia. It is now believed that Marco Polo knew nothing of the continent lying to the south of Java, and in any case the description given of the so-called Locac could not possibly be applied to Australia, as the writer speaks of elephants, etc., and in all probability was referring to some part of Siam or Cambodia. On the Mappamundi in the British Museum, of not later date than 1489, there is a coast-line which has been considered to represent the west coast of Australia. Investigation by Wood and others proves this claim to be merely fanciful, and in connexion therewith it must be noted that these old maps place other countries in impossible positions. Martin Behaim's globe, the oldest known globe extant, constructed in 1492, also shows what purports to be a part of Australia's coast-line, and a wooden globe in Paris bears an inscription to the effect that the *Terra Australis* was discovered in 1499. These also

have other countries located in impossible positions. It is possible, however, that the term *Terra Australis* was also applied to the region now known as Tierra del Fuego, hence little weight can be attached to this reference.

In the Dauphin map [about 1530–1536] Jave la Grande is supposed by some to represent Australia, but an inspection of the fanciful animals and other figures thereon lends no weight to the idea. As a matter of fact much of this map-drawing was simply an attempt to support the old notion that the land surface of the southern hemisphere must balance that of the northern.

(ii) *Arab Expeditions.* It is stated that the Arabs had come to Australia long before the Portuguese, the Spanish, or the Dutch, but there is not sufficient evidence to support the statement.

(iii) *Spanish and Portuguese Expeditions.* The last decade of the fifteenth century and the commencement of the sixteenth saw numerous expeditions equipped in the ports of Spain and Portugal for the purpose of exploiting the new world. The Portuguese rounded the southernmost Cape of Africa, which became known as the C  pe of Good Hope, and pushed eastward. The Spaniards, relying on the scientific conclusion that the world was spherical, attempted to get to the east by deliberately starting out west, Magalhaens by so doing reaching the Philippine Islands in 1521. It would appear, however, that for some reason all definite information regarding the *Terra Australis* previously alluded to was suppressed.

It may be mentioned that in 1606, de Quiros, on reaching the island that has retained the name of Espiritu Santo (the largest island of the New Hebrides group) thought that he had come to this great land of the South, and therefore named the group *La Austrialia del Espiritu Santo*. De Torres, who was with him, passed through the strait which now bears his name, and proceeded to the Philippine Islands, thus marking the close of Spanish activity in the work of Australian discovery. It is, however, doubtful if Torres saw the continent of Australia, and it seems very probable that he hugged the south coast of New Guinea on his way to Manila, and never came in sight of York Peninsula.

(iv) *Discoveries by the Dutch.* With the decline of Portuguese and Spanish naval supremacy came the opportunity of the Dutch for discovery. Cornelius Wytfliet's map, of which there was an English edition, published at Louvain in 1597, and which indicates roughly the eastern and western coasts of Australia, as well as the Gulf of Carpentaria, may have been taken from a Portuguese or Spanish source. The following often quoted passage, which occurs in Wytfliet's "*Descriptionis Ptolemaicae Augmentum*," is therefore simply a translation of some Portuguese or Spanish text. "The *Australis Terra* is the most southern of all lands. It is separated from New Guinea by a narrow strait. Its shores are hitherto but little known, since, after one voyage and another, that route has been deserted and seldom is the country visited, unless when sailors are driven there by storms. The *Australis Terra* begins at one or two degrees from the equator, and is maintained by some to be so great in extent that, if it were thoroughly explored, it would be regarded as a fifth part of the world."

The Dutch East India Company, in 1605, sent the *Duyfhen* from Bantam to explore the Islands of New Guinea. During March in the following year the *Duyfhen* coasted along the southern shores of New Guinea, and followed the west coast of Cape York Peninsula as far as Cape Keer-Weer ('Turn again). Dirck Hartog (on the plate in the Amsterdam Museum recording his voyage the name is written Dirck Hatich), in the *Eendracht* in 1616, sailed along a considerable part of the west coast of the Continent. It may be mentioned that the route was not definitely selected but that the navigator simply went further East than the usual course from the Cape to Java.

In 1618 the *Zeewulf* found land in lat. 20° 15' south, and in the following year Frederik Houtman discovered the reef off the west coast, now known as *Houtman's Abrolhos*.

In 1622 the Dutch vessel *Leeuwin* rounded the Cape at the south-west of the continent which now bears that name, and in 1623 the Dutch vessels *Pera* and *Arnhem*

discovered Arnhem Land, the peninsula on the western side of the Gulf of Carpentaria, which was so named in compliment to Peter Carpentier, Governor of the Dutch East India Company.

In 1627, Francis Thysz, commander of the *Gulde Zeepaerd*, with Pieter Nuyts, of the Dutch Council of Seventeen, on board, coasted along a portion of the shore of the Great Australian Bight. In 1628, De Witt, commander of the *Vianen*, discovered land on the north-west, viz., in about latitude 21° S. The *Batavia*, commanded by Francis Pelsart, was wrecked on the western coast of Australia in 1629. Pelsart was the first to carry to Europe an authentic account of the west coast of Australia, which, however, he described in the most unfavourable terms. The yachts *Amsterdam* and *Wesel*, under Gerrit Pool, visited the Gulf of Carpentaria in 1636.

Abel Janszoon Tasman, in command of two vessels, the *Heemskerck* and *Zeehaen*, set out in 1642 to ascertain the extent of the great southern continent. He named Van Diemen's Land, imagining it to be part of Australia proper, and sailing north-easterly discovered New Zealand. In his second voyage in 1644, Tasman visited the northern coast of Australia, sailing round the Gulf of Carpentaria and along the north-west coast as far down as the Tropic of Capricorn. The period of Dutch discoveries may be said to have ended with Tasman's second voyage, and, with the decline of Dutch maritime power, their interest in Australian discovery vanished. It may, however, be pointed out that William de Vlamingh landed at the mouth of the Swan River at the end of 1696.

4. **Discoveries by the English.**—English enterprise was early shown, viz., by Sir William Courteen petitioning James I., in 1624, for the privilege of erecting colonies in the *Terra Australis*, a petition which probably was not granted. The north-western shores of Australia were first visited by William Dampier, in the *Cygnets*, in 1688. In describing the country Dampier stated that he was certain that it joined neither Asia, Africa, nor America. In 1699 he again visited Australia, in command of H.M.S. *Roebuck*, and on his return to England published an account in which a description is given of trees, flowers, birds, and reptiles observed, and of encounters with natives.

It was a question at the end of the seventeenth century whether Tasmania and New Zealand were parts of Australia, or whether they were separated from it, but themselves formed part of a great Antarctic Continent. Lieutenant James Cook's first voyage, though primarily undertaken for the purpose of observing the transit of Venus from Otaheite, had also for its objective to ascertain whether the unexplored part of the southern hemisphere be only an immense mass of water or contain another continent. In command of H.M.S. *Endeavour*, a barque of 370 tons burthen, carrying about eighty-five persons, and accompanied by Sir Joseph Banks, Dr. Solander the naturalist, Green the astronomer, draughtsmen, and servants, Cook, after observing the transit of Venus at Otaheite, turned towards New Zealand, sighting that land on the 8th October, 1769, in the neighbourhood of Poverty Bay. Circumnavigating the North and South Islands, he proved that New Zealand was connected neither with the supposed Antarctic continent nor with Australia, and took formal possession thereof in the name of the British Crown. On the 20th April, 1770, at 6 a.m., Cook sighted the Australian mainland at a place he called Point Hicks, naming it after his first-lieutenant, who first saw it. Coasting northwards, Botany Bay was discovered on the 29th April, 1770. The *Endeavour* dropped anchor, and Cook landed on the following day. On the 2nd May, 1770, a seaman named Sutherland died and was taken ashore to be buried; he was probably the first British subject buried on Australian soil. Cook sailed along the coast in a northerly direction for nearly 1,300 miles until the 12th June, 1770, when the *Endeavour* was seriously damaged by striking a coral reef in the vicinity of Trinity Bay. Repairs occupied nearly two months, and the *Endeavour* then again set her course to the north, sailing through Torres Straits and anchoring in the Downs on the 14th June, 1771. In 1772 Cook was put in command of the ships *Resolution* and *Adventure*, with a view of ascertaining whether a great southern continent existed, and having satisfied himself that, even if it did, it lay so far to the south as to be useless for trade and settlement, he returned to England in 1774. Cook's last voyage was undertaken in 1776, and he met his death on the 14th February, 1779, by which date practically the whole coast of Australia had been explored. The only remaining discovery of importance to be made was the existence of a channel between Tasmania and Australia. This was discovered by Flinders and Bass in 1798.

§ 2. The Taking Possession of Australia.

1. **Annexation of Eastern Part of Australia, 1770.**—Although representatives of the nations mentioned in the previous section landed or claim to have landed on the shores of Australia on various occasions during the sixteenth and seventeenth centuries, it was not until the 23rd August, 1770, that the history of Australia was brought into definite political connexion with western civilization. It was on that date that Captain Cook took possession “of the whole eastern coast, from lat. 38° to this place, lat. $10\frac{1}{2}^{\circ}$ S., in right of His Majesty King George the Third.” Cook, however, proclaimed British sovereignty only over what are now the eastern parts of New South Wales and Queensland, and formal possession, on behalf of the British Crown, of the whole of the eastern part of the Australian Continent and Tasmania was not taken until the 26th January, 1788. It was on this last date that Captain Phillip’s commission, first issued to him on the 12th October, 1786, and amplified on the 2nd April, 1787, was read to the people whom he had brought with him in the “First Fleet.”

A full historical account of the period referred to may be found in the “Historical Records of New South Wales,” vol. I., parts 1 and 2.

2. **Original Extent of New South Wales.**—The commission appointed Phillip “Captain-General and Governor-in-Chief in and over our territory called New South Wales, extending from the Northern Cape or extremity of the coast called Cape York, in the latitude of ten degrees thirty-seven minutes south, to the southern extremity of the said territory of New South Wales or South Cape, in the latitude of forty-three degrees thirty-nine minutes south, and of all the country inland westward as far as the one hundred and thirty-fifth degree of east longitude reckoning from the meridian of Greenwich, including all the islands adjacent in the Pacific Ocean within the latitudes aforesaid of ten degrees thirty-seven minutes south and forty-three degrees thirty-nine minutes south.”

Although in November, 1769, Captain Cook had taken possession of the North Island of New Zealand, and in January, 1770, also of the South Island, it is a matter of doubt whether, at the time when Captain Phillip’s commission was drawn up, New Zealand was considered as one of the “islands adjacent in the Pacific Ocean.” The facts that under the Supreme Court Act (Imperial) of 1823 British residents in New Zealand were brought under the jurisdiction of the court at Sydney, while in 1839 there was a proposal on the part of the British Government to appoint a Consul in New Zealand, would leave this an open question, as nothing more than extra-territorial jurisdiction may have been intended. Various hoistings of flags notwithstanding, New Zealand does not appear to have unequivocally become British territory until 1840. In that year, on the 29th January, Captain Hobson arrived at the Bay of Islands. On the following day he read the commission, which extended the boundaries of the colony of New South Wales so as to embrace and comprehend the Islands of New Zealand. On the 5th February the Treaty of Waitangi, made with the native chiefs, was signed. Finally, on the 21st May, British sovereignty over the islands of New Zealand was explicitly proclaimed. From that date until the 3rd May, 1841, New Zealand was indubitably a dependency of New South Wales.

3. **Annexation of Western Australia, 1829.**—In June, 1825, Lieut.-General Sir R. Darling, then Governor of New South Wales, sent Major Lockyer, with a party numbering about 75, to found a settlement at King George III. Sound. The expedition sailed from Sydney on the 9th November, 1826, and landed at the Sound on the 26th December following and hoisted the British flag. The settlement was at first governed from Sydney, but on the 7th March, 1831, it was removed to the Swan River Settlement, and the convict portion of the population removed to Van Diemen’s Land. In 1826 Captain James Stirling was sent in H.M.S. *Success* on special service in connexion with the removal of the penal settlement from Melville Island, and was authorized to explore part of Western Australia. A party from this vessel explored the Swan River on the 8th March, and King George’s Sound was reached on the 2nd April. In consequence of the favourable report made by Captain Stirling, the Imperial Government decided to establish a colony at Swan River. Captain Stirling was accordingly despatched as Lieutenant-Governor with a party of intending settlers in the *Parmelia*, and in the following month

H.M.S. *Challenger*, under Captain Fremantle, was sent off from the Cape of Good Hope. On the 2nd May, 1829, Captain Fremantle hoisted the British flag on the south head of the Swan River, and took possession of "all that part of New Holland which is not included within the territory of New South Wales," and in the following month the *Parmelia* arrived off Garden Island. Thus, before the middle of 1829, the whole territory now known as the Commonwealth of Australia had been constituted a dependency of the United Kingdom.

For a fuller account of the discovery and annexation of Western Australia reference may be made to the *Western Australian Year Book*, 1905, part I.

§ 3. The Creation of the Several Colonies.

1. **New South Wales as Original Colony.**—From what has been said, the mainland of Australia was, in Governor Phillip's commission of 1786, divided by the 135th meridian of east longitude into two parts. The earliest colonists believed that Van Diemen's Land—the present State of Tasmania—was actually joined to the mainland, and it was not till 1798 that the contrary was known. In that year, by sailing through Bass Straits, Flinders proved that it was an island. The territory of New South Wales, as originally constituted, and of New Zealand, which may be included, although Cook's annexation was not properly given effect to until 1840, was thus :—

					Square Miles.
Australia, east of 135° longitude east	..	..	..	..	1,454,312
Van Diemen's Land	..	..	..	..	26,215
New Zealand	..	..	..	..	104,471
Total	..	..	..	..	1,584,998

The western part of Australia, not then annexed, comprised originally 1,494,054 square miles.

2. **Separation of Van Diemen's Land, 1825.**—In 1825, Van Diemen's Land, as Tasmania was then called, was politically separated from New South Wales, being constituted a separate colony on the 14th June of that year. This reduced the area of New South Wales and its territorial dependencies by 26,215 square miles, that is, to 1,558,783 square miles.

3. **Extension of New South Wales Westward, 1827.**—In 1827 the western or inland boundary of New South Wales was extended westward to the 129th meridian, thus increasing its area by 518,134 square miles, and making it, including New Zealand and excluding Tasmania, 2,076,917 square miles, or excluding also New Zealand, 1,972,446 square miles.

4. **Western Australia constituted a Colony, 1829.**—The territory annexed by Captain Fremantle in 1829, viz., "all that part of New Holland which is not included within the territory of New South Wales," extended eastward to the 129th meridian, and comprised 975,920 square miles. The constitution of this area into the Colony of Western Australia, now one of the six States of the Commonwealth, was the consequence of Fremantle's act. By it the annexation of the whole of the Continent of Australia by the British Crown was completed. The Australian colonies at this time were as indicated in the following table :—

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area Square Miles.
New South Wales (including New Zealand) ..	1770	1786	1788	2,076,917
Van Diemen's Land ..		1825	1803	26,215
Western Australia ..	1829	1829	1829	975,920

5. Creation of South Australia as a Province, 1836.—On the 15th August, 1834, the Act 4 and 5 William IV., cap. 95. was passed, creating South Australia a “province,” and towards the end of the year 1836 settlement took place. The first governor, Captain Hindmarsh, R.N., arrived at Holdfast Bay on the 28th December, 1836, and on the same day the new colony was officially proclaimed. The new colony embraced 309,850 square miles of territory, which, lying south of the 26th parallel of south latitude, and between the 141st and 132nd meridians of east longitude, was up to that time included within the territory of New South Wales. Thus the area of New South Wales and New Zealand was reduced to 1,767,067 square miles.

6. Separation of New Zealand, 1840.—New Zealand, nominally annexed by Captain Cook and formally declared by proclamation in 1840 as a dependency of New South Wales, was, by letters patent of the 16th November of that year, constituted a separate colony under the powers of the Act 3 and 4 Vic., cap. 62, of the 7th August, 1840. Proclamation of the separation was made on the 3rd May, 1841. The area of the colony is 104,471 square miles. This separation reduced the political territory of New South Wales to 1,662,596 square miles.

7. The Colony of Northern Australia, 1847.—In the year 1846, when the British Government was experiencing difficulty as regards the transportation of convicts, an attempt was made by Mr. Gladstone, then Colonial Secretary, to establish a purely penal colony, without free settlers (at least at the outset), to be called Northern Australia. This colony did not succeed in securing a permanent place on the map, though its intended metropolis was successfully established and still bears Mr. Gladstone's name. The new colony comprised such of the territories of the colony of New South Wales as lay to the northward of latitude 26° S. Sir Charles Fitzroy, then Governor of New South Wales, was by letters patent appointed Governor of Northern Australia, the actual administration being left in the hands of a Superintendent, who was to be implicitly guided by instruction from the Governor. At the same time Northern Australia was constituted a separate colony under its own Government, although the authority which the Secretary of State for the Colonies would otherwise exercise had been deputed in the first instance to the Governor of New South Wales. In the *London Gazette* of the 8th May, 1846, Colonel Barney, R.E., was appointed Lieutenant-Governor of Northern Australia, and on the 25th January, 1847, he reached Port Curtis, accompanied by other public officers of the new colony. On the 30th January the ceremony of swearing in the officials of Northern Australia was proceeded with, and on the same day the first *Government Gazette* of the new colony was issued in manuscript. This gazette contained a formal proclamation to the effect that all the land lying to the north of latitude 26° S. should thereafter be known as Northern Australia, and specified the names of the members of the Executive and Legislative Councils of the new colony. The headquarters of the Superintendent and other officials were established at Gladstone, although no other steps appear to have been taken towards securing a permanent settlement. In July, 1846, when Earl Grey succeeded Mr. Gladstone as Secretary of State for the Colonies, one of his first official steps was the complete reversal of the policy of his predecessor with respect to the founding of the new colony of Northern Australia, and by a despatch dated the 15th November, 1846, Sir Charles Fitzroy was informed that the letters patent under which the new colony was constituted had been revoked. This news was received at Gladstone on the 15th April, 1847, and on the 9th May following the settlement was broken up. The territories comprised in the Colony of Northern Australia then reverted to New South Wales.

8. Separation of Victoria, 1851.—In 1851, what was known as the “Port Phillip District” of New South Wales, was constituted the Colony of Victoria, “bounded on the north and north-east by a straight line drawn from Cape Howe to the nearest source of the River Murray, and thence by the course of that river to the eastern boundary of the colony of South Australia.” The area of the new colony was 87,884 square miles, and its separate existence took effect from the 1st July, 1851, upon the issuing of the writs for the first election of elective members of the Legislative Council; this reduced the territory of New South Wales to 1,574,712 square miles.

9. Separation of Queensland, 1859.—The northern squatting districts of Moreton, Darling Downs, Burnett, Wide Bay, Maranoa, Leichhardt, and Port Curtis, together with the reputed county of Stanley, were granted an independent administration and formed

into a distinct colony under the name of Queensland, by letters patent dated the 6th June, 1859, although separation from New South Wales was not consummated until the 10th December of the same year, upon the assumption of office of the first Governor. The territory originally comprised in the new colony was described in the letters patent as being so much of the colony of New South Wales as lies northwards of a line commencing on the sea coast at Point Danger, in latitude about $28^{\circ} 8'$ south, running westward along the Macpherson and Dividing Ranges and the Dumaresq River to the MacIntyre River, thence downward to the 29th parallel of south latitude, and following that parallel westerly to the 141st meridian of east longitude, which is the eastern boundary of South Australia, together with all the adjacent islands, their members, and appurtenances in the Pacific Ocean. In Year Book No. 1 it was stated that the western boundary of the new colony was defined by the letters patent of the 6th June, 1859, as being "the 141st meridian of longitude from the 29th to the 26th parallel, and thence the 138th meridian north to the Gulf of Carpentaria." Further investigations have however, shown that this statement is incorrect, and that the western boundary was not specifically defined. The western limits of the new colony were, however, defined by inference from the fact that its area comprised the territory to the northward of a line extending as far west as the 141st meridian of east longitude, *i.e.*, the 141st meridian was the western boundary. The area of the new colony thus constituted was 554,300 square miles. By this separation the remaining territory of New South Wales was divided into two parts, *viz.*, one of 310,372 square miles, the present State, and another of 710,040 square miles, of which 116,200 square miles form now a part of Queensland, 523,620 square miles form the Northern Territory, and 70,220 square miles form now a part of South Australia.

10. **The Colonies at the Close of 1859.**—Since the separation of Queensland, no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were therefore as hereunder :—

AUSTRALASIAN COLONIES AS AT THE CLOSE OF 1859.

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area Square miles.
New South Wales	1770	1786	1788	1,020,412
Tasmania	1770	1825	1803	26,215
South Australia	1770	1834	1836	309,850
Victoria	1770	1851	1834	87,884
Queensland	1770	1859	1824	554,300
Western Australia	1829	1829	1829	975,920
New Zealand	1840	1841	1814	104,471(a)

(a) By proclamation dated 10th June, 1901, the area of the Dominion of New Zealand was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

11. **The Changing Boundaries of the Colonies.**—When, on the 15th August, 1834, the Imperial Government constituted the province of South Australia, there lay between its western boundary and the eastern boundary of Western Australia (as proclaimed by Fremantle in 1829) a strip of country south of the 26th parallel of south latitude, and between the 132nd and 129th meridians of east longitude, legally included within the territory of New South Wales. The area of this territory, frequently but improperly referred to as "No Man's Land," has been calculated to cover approximately 70,220 square miles. On the 10th October, 1861, by the authority of the Imperial Act 24 and 25 Vic., cap. 44, the western boundary of South Australia was extended so as to cover this strip, and to coincide with the eastern boundary of Western Australia—the 129th meridian. By letters patent dated the 13th March, 1861, forwarded by the Colonial Secretary to the Governor of Queensland on the 12th April, 1862, the area of Queensland was increased by the annexation of "so much of the colony of New South Wales as lies to the northward of the 26th parallel of south latitude, and between the 141st and 138th

meridians of east longitude, together with all and every the adjacent islands, their members, and appurtenances, in the Gulf of Carpentaria." The area of South Australia was therefore increased by 70,220 square miles, and became 380,070 square miles, while the area of Queensland increased by 116,200 square miles, became 670,500 square miles. Nearly two years after the accession of territory, viz., on the 6th July, 1863, the Northern Territory, containing 523,620 square miles—also formerly a part of New South Wales—was, by letters patent, brought under the jurisdiction of South Australia, whose area was thus increased to 903,690 square miles; whilst that of New South Wales was diminished by these additions to South Australia, and by the separation of the colonies of New Zealand, Victoria and Queensland, till its area became only 310,372 square miles. The territories of Tasmania, Western Australia, and the three other separated colonies with the exception of some minor islands added to Queensland, remain as originally fixed.

12. **The Colonies in 1900.**—From what has been said in the previous sub-section it will be seen that the immense area generally known as Australasia had by 1863 been divided into seven distinct colonies, the combined areas of which amounted to 3,079,332 square miles.

§ 4. Establishment of the Commonwealth of Australia.

1. **General.**—On the 1st January, 1901, the colonies mentioned, with the exception of New Zealand, were federated under the name of the "Commonwealth of Australia," the designation of "Colonies"—excepting in the case of the Northern Territory, to which the designation "Territory" is applied—being at the same time changed into that of "States." The total area of the Commonwealth of Australia is, therefore, 2,974,581 square miles. The dates of creation and the areas of its component parts, as determined on the final adjustment of their boundaries, are shown in the following table:—

THE COMMONWEALTH OF AUSTRALIA.—AREA, ETC., OF COMPONENT PARTS.

State.	Year of Formation into Separate Colony.	Present Area in Square Miles.	State.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales(a)	1786	310,372(a)	Tasmania ..	1825	26,215
Victoria.. ..	1851	87,884	Northern Territory	1863	523,620
Queensland ..	1859	670,500			
South Australia ..	1834	380,070	(b) Area of the Com-		
Western Australia	1829	975,920	monwealth ..	..	2,974,581

(a) On the 1st January, 1911, the Federal Capital Territory embracing an area of 940 square miles was taken over by the Commonwealth from the State of New South Wales, the area of that State therefore is now 309,432 square miles.

(b) The present Dominion of New Zealand was constituted a separate colony in 1841. The addition of its area, 104,751 square miles, to the total shown in the table above, gives a total for Australasia of 3,079,332 square miles as referred to in 12 *ante*.

2. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred by proclamation to the Commonwealth on the 1st January, 1911.

3. **Transfer of the Federal Capital Territory to the Commonwealth.**—On the 18th October, 1909, the Commonwealth and the State of New South Wales entered into an

agreement for the surrender to and acceptance by the Commonwealth of an area of 912 square miles as the seat of Government of the Commonwealth. In December, 1909, Acts were passed by the Commonwealth and New South Wales Parliaments approving the agreement, and on the 5th December, 1910, a proclamation was issued vesting the Territory in the Commonwealth on and from the 1st January, 1911. By the Jervis Bay Territory Acceptance Act 1915, an area of 28 square miles at Jervis Bay, surrendered by New South Wales according to an agreement made in 1913, was accepted by the Commonwealth.

4. **Transfer of British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles.

5. **Transfer of Norfolk Island.**—Although administered for many years by the Government of New South Wales, this island was, until 1st July, 1914, a separate Crown colony. On that date it was taken over by the Federal Parliament as a territory of the Commonwealth.

§ 5. The Exploration of Australia.

1. **Introduction.**—A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). It is proposed to give here only a brief summary of the more important facts relating to the subject.

2. **Eastern Australia.**—(i) *General.* The first steps towards the exploration of New South Wales were taken by Captain Phillip and his officers, who, during 1788 and the years immediately following, made a number of excursions in the neighbourhood of Port Jackson, to Broken Bay, and along the Hawkesbury and Nepean Rivers.

(ii) *French Voyages of Exploration, 1788 to 1802.* Towards the close of the 18th century the French, who were supposed to covet territory in Australia, sent out several exploring expeditions. In 1788 two vessels under the command of Lapérouse put into Botany Bay to refit. In 1792 the French Admiral D'Entrecasteaux was in Australian waters with two vessels and discovered and named several places on the Tasmanian coasts. In 1800 an expedition, sent out by the French Republic, examined parts of the coasts of Van Diemen's Land and South Australia. It was chiefly in consequence of rumours to the effect that the French intended to establish a colony in Australia, that steps were taken by the British to form settlements at various places on the Australian coasts.

(iii) *Bass and Flinders, 1796 to 1803.* In 1796 and 1797 Bass and Flinders explored the coast in a southerly direction from Port Jackson as far as Western Port. In 1798 Bass, accompanied by Flinders and eight seamen, circumnavigated the island of Tasmania, thus proving the existence of the straits which now bear his name. In 1801 Flinders again came to Australia in command of H.M.S. *Investigator*, which was the first vessel to completely circumnavigate the Australian continent.

(iv) *Discovery of Port Phillip, 1802.* On the 5th January, 1802, Lieutenant Murray, who had been sent out to trace the coast between Point Schanck and Cape Otway, sighted the entrance to Port Phillip, which he did not, however, enter, owing to stress of weather, until the 15th February. Shortly afterwards Flinders entered Port Phillip, and in 1803 Charles Robbins explored the Yarra for some miles above the present site of Melbourne.

(v) *The Blue Mountains Crossed, 1813.* In 1813 Gregory Blaxland succeeded in effecting a passage over the Blue Mountains, which had previously proved an inaccessible barrier to all attempts to extend the infant colony in a westerly direction. G. W. Evans, following on Blaxland's tracks, soon penetrated further inland and discovered and named the Fish, Campbell, Macquarie, and Lachlan Rivers. In 1817 and 1818

John Oxley, Allan Cunningham, Charles Frazer, and others explored a considerable part of the Lachlan and Macquarie Rivers, and discovered and named the Castlereagh River, the Arbutnot Range, the Liverpool Plains, the Hastings River, and Port Macquarie.

(vi) *Hamilton Hume, 1814 to 1824.* In 1816 Hamilton Hume, who two years previously had explored the country round Berrima, discovered and named the Goulburn Plains and Lake Bathurst. In 1824, accompanied by William Hilton Hovell, Hume, starting off from Lake George, reached the Murrumbidgee and sighted the Snowy Mountains. On the 16th December, 1824, he reached the Southern Ocean at the spot where Geelong now stands. This expedition had a great and immediate influence on the extension of Australian settlement.

(vii) *Allan Cunningham, 1817 to 1829.* In 1823 Cunningham, who had accompanied Oxley in 1817, discovered and named Pandora's Pass, leading to the Liverpool Plains from the Upper Hunter, and in 1827 he discovered the Darling Downs.

(viii) *Charles Sturt, 1828 to 1830.* In 1828 the Darling River was discovered by Sturt, who in the following year explored the Murray River, tracing it to its mouth at Lake Alexandrina in Encounter Bay. Sturt thus connected his overland journey with the discoveries of Flinders and other coastal explorers. In the meantime discovery on the Australian coasts had been followed up by Captains Wickham and Stokes in *H.M.S. Beagle*.

(ix) *Sir Thomas Mitchell, 1831 to 1846.* In 1831 Mitchell discovered the lower courses of the Peel (Namoi), Gwydir, and Dumaresq Rivers, and identified the Upper Darling. Two years later he explored the country between the Bogan and Macquarie Rivers, and in 1835 he traced the Darling 300 miles down from Bourke. In 1836 he ascended the Murray and Loddon Rivers and discovered the Avoca, the Campaspe, and the Wimmera Rivers, reaching the coast near Cape Northumberland. On his return journey Mitchell visited Portland Bay, where he found the Henty family established, and ascending Mount Macedon, he saw and identified Port Phillip. In 1845 and 1846 Mitchell again set out, accompanied by Edmund B. Kennedy, and explored the Narran, Balonne, and Culgoa Rivers. Ascending the Balonne, he turned westward, exploring the Maranoa and the Warrego. Proceeding to the north he then discovered the Belyando and the Barcoo Rivers.

(x) *McMillan, Strzelecki, Leslie and Russell, 1839 to 1841.* In the meantime other explorers had been on the field and had made numerous discoveries. In 1839 and 1840 Angus McMillan discovered and named Lake Victoria, the Nicholson, Mitchell, and Macallister Rivers, and explored the country as far as the Latrobe River. In 1840 Strzelecki discovered Mount Kosciusko, the Latrobe River, and Lake King. In 1840 and 1841 Patrick Leslie and Stuart Russell explored the Condamine River.

(xi) *Leichhardt, 1844 to 1845.* In 1844 and 1845 Ludwig Leichhardt made a number of discoveries. Leaving the Condamine River he discovered the Dawson River, Peak Downs, the Planet and Comet Rivers, and Zamia Creek. Later on he found and named the Mackenzie, Isaacs, Suttor, Burdekin, Lynd, Mitchell, Leichhardt, Nicholson, McArthur and Roper Rivers, and after exploring part of the coast of the Gulf of Carpentaria, reached the settlement of Victoria at Port Essington. In 1848 Leichhardt equipped another expedition and set out from the Cogoon. No sure clue as to his fate or as to the fate of his companions has ever come to light.

(xii) *Kennedy, 1847 to 1848.* In 1848 Edmund Kennedy, who had accompanied Mitchell in 1845 and 1846, and who had further explored the Barcoo and Victoria Rivers in 1847, attempted to make his way up the eastern coast of Cape York Peninsula. After great hardships he reached the Escape River, where he was murdered by the blacks.

(xiii) *A. C. Gregory, 1846 to 1858.* A. C. Gregory's earliest explorations were in Western Australia, where in 1846 he discovered Lake Moore. In 1855 Gregory explored the Fitzmaurice and Victoria Rivers and Sturt's Creek. He examined the Gilbert River and its tributaries, and made his way in a westerly direction across to Brisbane. In 1858 Gregory explored the districts near the Barcoo and Thompson Rivers, Strzelecki's Creek, and Lake Blanche.

(xiv) *Later Exploration of the North East, 1859 to 1872.* After Kennedy's ill-fated expedition the main portion of Eastern Australia was fairly well known. Certain parts

of what is now Queensland, however, still remained unexplored. These were examined by G. E. Dalrymple in 1859, by Frederick Walker in 1862, by Frank and Alex Jardine in 1864, and by William Hann in 1872. Hann discovered the Tate, Walsh, Palmer and Normanby Rivers. This expedition practically completed the exploration of Eastern Australia. The gold discoveries on the Palmer River, in Queensland, following soon after, led to a considerable amount of minor exploration being carried out by prospectors whose labours are, however, unrecorded.

3. Central Australia.—(i) *General.* In 1836 Colonel Light surveyed the shores of St. Vincent's Gulf, and selected the site for the settlement at Adelaide. In the same year Mitchell had succeeded in travelling overland from the Darling to Cape Northumberland, and the settlers found little difficulty in driving stock from various parts of New South Wales to the new country. A great deal of minor exploration was done by these pioneers, the first of whom to lead the way across to the Port Phillip settlement with sheep in 1837 was Charles Bonney. In 1838 the overlanding of stock was extended to Adelaide by Joseph Hawdon.

(ii) *Eyre, 1838 to 1841.* In 1841 Edward John Eyre, who had previously discovered Lake Hindmarsh, and had explored the country to the north-east of Spencer's Gulf, succeeded, after great hardship, in reaching Albany overland from Adelaide. After this expedition settlers soon spread in a northerly direction from Adelaide, and various expeditions in search of grazing country were carried out by these pioneers.

(iii) *Sturt's Later Explorations, 1844 to 1845.* In 1844 Charles Sturt, whose explorations in Eastern Australia have already been referred to, set out from the Darling on an expedition to reach the centre of the continent. He reached his furthest point in latitude $24^{\circ} 30' S.$ and longitude $137^{\circ} 58' E.$ in September, 1845, and, after enduring great privations, was compelled to retreat through want of water.

(iv) *Stuart, 1858 to 1862.* John MacDouall Stuart accompanied Captain Sturt on his last expedition. After minor explorations in the vicinity of Lake Eyre, Stuart made an unsuccessful attempt to cross the continent from south to north in 1860. After discovering the Frew, Fincke, and Stevenson Creeks, Chambers Pillar, and the McDonnell Range, he camped at the centre of Australia on the 22nd April, 1860. In the following year Stuart was placed in command of an expedition equipped by the South Australian Government, and succeeded in crossing the continent, reaching the sea at Chambers Bay on the 25th July, 1862.

(v) *Burke and Wills Expedition, 1860 to 1861.* In 1860 Robert O'Hara Burke and William Wills led an expedition northward from Melbourne to explore the country as far as the Gulf of Carpentaria. Through their arrangements having miscarried, both Burke and Wills perished in the bush, after having crossed the continent and returned to their depot at Fort Wills, only to find it deserted. Various relief expeditions were sent out, and among them may be specially mentioned Howitt's Relief Expedition, the Queensland Relief Expeditions under Walker and Landsborough, and the South Australian Relief Party under McKinlay. Though the actual work of exploration carried out by the Burke and Wills expedition was unimportant, the discoveries made by the relief parties sent out were of great value in opening up Central Australia.

(vi) *Giles, 1872 to 1876.* In 1872 Ernest Giles discovered Lake Amadeus and Mount Olga. In that year and in the following one he made unsuccessful attempts to force his way through the desert to the settlements of Western Australia. In 1875 Giles, accompanied by W. H. Tietkins, set out from Beltana, and after making his way in the vicinity of latitude $30^{\circ} S.$, to the settled districts of Western Australia, returned to the Peake telegraph station by way of the Murchison, Gascoyne, and Ashburton Rivers.

(vii) *Later Explorations.* Other explorations in Central Australia were carried out by Major Warburton (1873), W. C. Grosse (1873), W. O. Hodgkinson (1875), Nathaniel Buchanan (1878), Frank Scarr (1878), Ernest Favenc (1878-83), H. V. Barclay (1877), A. Johns and P. Saunders (1876), David Lindsay (1883), H. Stockdale (1884), W. H. Tietkins (1889), A. Searcy (1882-96), and Hubbe (1896).

4. Western Australia.—(i) *General.* In 1791 George Vancouver, in command of H.M.S. *Discovery*, reached and named King George's Sound. On the 26th December, 1826, Major Lockyer, with a detachment of soldiers, landed at King George's Sound to form a

settlement, under instructions from Sir Ralph Darling, then Governor of New South Wales. The settlement was established in order to forestall the French, who, it was rumoured, intended to occupy the harbour. Early in 1827 Captain James Stirling and Charles Frazer examined and reported upon the Swan River district with a view to forming a settlement there. In 1829 Captain Fremantle landed at the mouth of the Swan River and took possession of the country. A month later Stirling arrived with the first settlers.

(ii) *Early Explorers.* In November, 1829, Alexander Collie and Lieutenant Preston explored the coast between Cockburn Sound and G  ographe Bay, and in the following month Dr. J. B. Wilson, R.N., discovered and named the Denmark River.

In 1830 John Septimus Roe explored the country in the neighbourhood of Cape Naturaliste and between the Collie and Preston Rivers, and in 1835 examined the districts between the headwaters of the Kalgan and Hay Rivers. In 1836 and 1839 Roe explored the country north and east of Perth, and in 1848 traced the course of the Pallinup River for some distance.

Other early explorers in the West were Ensign R. Dale (1830), Captain Bannister (1831), W. K. Shenton (1831), J. G. Bussell (1831), Lieutenant Preston (1831), Alexander Collie (1832), F. Whitfield (1833) A. Hillman (1833), G. F. Moore (1834), and Lieutenant Bunbury (1836).

(iii) *Grey, 1837 to 1839.* In 1837 Captain (afterwards Sir) George Grey discovered and traced the Glenelg River. In 1839 he explored the country between the Williams and Leschenault Rivers, and later succeeded in making his way along the coast from the mouth of the Gascoyne River to Perth.

(iv) *F. T. Gregory, 1857 to 1861.* In 1857 and 1858 Frank T. Gregory examined the upper reaches of the Murchison River and reached the Gascoyne River, which he descended to its mouth, whence he made his way to Perth. In 1861 Gregory explored the north-western districts, discovering the Fortescue, Ashburton, Shaw, De Grey, and Oakover Rivers.

(v) *Sir John Forrest, 1869 to 1883.* In 1869 John Forrest (later Lord Forrest of Bunbury) penetrated to the east some distance past Mount Margaret and discovered Lake Barlee. In 1870 he succeeded in making his way from Perth to Adelaide via Esperance Bay, Israelite Bay, and Eucla, and in 1874, accompanied by his brother Alexander and four others, he crossed from Geraldton to the overland telegraph line near Peake Station. In 1883 Forrest explored a large portion of the Kimberley Division, Cambridge Gulf, and the lower part of the Ord River.

(vi) *Alexander Forrest, 1871 to 1879.* In 1879 Alexander Forrest, who had previously accompanied his brother on two expeditions, made his way from the De Grey River to the Daly Waters Station on the overland telegraph line, via Beagle Bay, the King Leopold Range, Nicholson Plains, and the Ord and Victoria Rivers.

(vii) *L. A. Wells, 1892 to 1897.* In 1892 Wells examined practically the whole of the still unexplored districts between Giles' track of 1876 and Forrest's route of 1874, and in 1896 and 1897 he explored the country between the East Murchison and Fitzroy Rivers.

(viii) *Later Explorations in Western Australia.* During the latter part of the 19th century various expeditions were sent out to explore those parts of Western Australia (chiefly in the north-western districts) which still remained unknown. Those whose names are connected with the later exploration of Western Australia are—David Carnegie (1896-7) who discovered a practical stock route between Kimberley and Coolgardie; W. Carr-Boyd (1883-96), who explored the country near the Rawlinson Ranges and made several excursions between the southern goldfields of Western Australia and the South Australian border; H. F. Johnston, G. R. Turner, and E. T. Hardman (1884), who discovered the Mary and Elvire Rivers; F. S. Brockman, Charles Crossland, Gibb Maitland, and Dr. F. M. House (1901), who explored the extreme north of the State; F. H. Hann (1896-1907), who made various excursions in the north-west and between Laverton and Oodnadatta.

(ix) *Other Explorers.* Other explorers whose names are connected with the exploration of Western Australia are:—George Eliot, who, in 1839, explored the country between the Williams and Leschenault; William Nairne Clark, who, in 1841, discovered immense

jarrah and karri forests in the south-west ; R. H. Bland (1842) ; H. Landor (1842) ; Lieutenant Helpmann (1844) ; Captain H. M. Denham (1858) ; B. D. Clarkson, C. E. and A. Dempster, and C. Harper (1861) ; C. C. Hunt and Ridley (1863) ; R. J. and T. C. Sholl (1865) ; A. McRae (1866) ; Philip Saunders and Adam Johns (1876) ; H. Stockdale (1884) ; H. Anstey (1887) ; F. Newman and W. P. Goddard (1890) ; J. H. Rowe (1895) ; C. A. Burrows and A. Mason (1896) ; Hugh Russell (1897) ; and John Muir (1901).

§ 6. The Constitutions of the States.

1. **Introduction.**—The subject of “General Government” is dealt with in some detail in Chapter III., but it has been thought desirable here to give a brief statement of the constitutional history of Australia, with a view of showing how the present Constitutions of the States have been built up.

2. **Early Constitutional History.**—(i) *General.* The earliest statute relating to Australia was passed in the year 1784, for the purpose of empowering the King in Council to appoint places in Australia to which convicts might be transported. By an Order in Council dated the 6th of December, 1786, His Majesty’s “territory of New South Wales, situated on the east part of New Holland,” was appointed such a place. Captain Phillip, who was appointed the first Governor and Vice-Admiral of the territory, was empowered by his commission and letters patent to make ordinances for the good government of the settlement. By an Act passed in 1787, authority was given for the establishment of a court of criminal jurisdiction in Sydney. In the early days of settlement, the Governor’s power was almost absolute, and his rule virtually despotic, tempered by his own discretion and by the knowledge that he was responsible to the Imperial authorities for any maladministration. By Acts passed in 1819, 1821, and 1822, the Governor was given limited powers to impose local taxation in the shape of Customs duties on spirits, tobacco, and other goods imported into the Colony.

(ii) *The First Constitutional Charter.* In 1823 an Act was passed authorizing the creation of a Council, consisting of from five to seven persons charged with certain legislative powers of a limited character. This was the first constitutional charter of Australia, and was later improved and amended by an Act passed in 1828, and applied both to New South Wales and to Van Diemen’s Land, which had been politically separated in 1825.

(iii) *First Representative Legislature.* In 1842 an important measure was passed by the Imperial Government, establishing for the first time in Australia, a Legislature partly, but not wholly, representative in character. It was enacted that there should be within the colony of New South Wales a Legislative Council, to consist of thirty-six members, twelve of whom were to be nominated by the Sovereign and twenty-four elected by the inhabitants of the colony. The Act contained provisions defining the legislative functions of the Council, and regulated the giving or withholding of the Royal assent to Bills passed by the Council. This Act did not grant responsible government to New South Wales ; the heads of the Departments and other public officers continued to hold their offices at the pleasure of the Crown, as represented by the Governor. The new Council was opened by Sir George Gipps, on the 1st August, 1843.

(iv) *The Australian Colonies Government Act 1850.* The next important Act relating to representative government in Australia is the Australian Colonies Government Act, passed in 1850. The two main objects of this Act were (a) the separation of the Port Phillip District from New South Wales, and (b) the establishment of an improved system of government in all the Australian colonies. For New South Wales, for the separated Victoria, for Van Diemen’s Land, and for South Australia, similar Legislatures were prescribed. The general provisions of the Act provided that the existing Legislature in New South Wales should decide the number of members of which a new Council was to consist in that colony, and should perform the same task for Victoria. On the issue of the writs for the first election in Victoria, separation was to be deemed complete. One-third of the number of members of the Council in each Colony was to be nominated by the Crown. The existing Legislatures in Van Diemen’s Land and South Australia were to decide as to the number of members in the new Council in each, but they were

not to exceed twenty-four. Power was given to the Governor and Legislative Council in each colony to alter the qualifications of electors and members as fixed by the Act, or to establish, instead of the Legislative Council, a Council and a House of Representatives, or other separate Legislative Houses, to be appointed or elected by such persons and in such manner as should be determined, and to vest in such Houses the powers and functions of the old Council. The powers and functions of the Councils under this Act were as follows :—(a) To make laws for the peace, order, and good government of the colony ; (b) to impose taxation, including the imposition of Customs duties ; and (c) to appropriate to the public service the whole of the public revenue arising from taxes, duties, rates, and imposts. The restrictions on the powers and functions of the Councils were as follows :—(a) That no such law should be repugnant to the law of England, (b) that no such law should interfere with the sale and appropriation of Crown lands, (c) that no Customs duties of a differential character should be imposed, and (d) that it should not be lawful for the Council to pass any Bill appropriating to the public service any sum of money for any purpose unless the Governor should have previously recommended that provision for such appropriation be made.

3. **New South Wales.**—After the Act just referred to had been proclaimed, an Electoral Bill for New South Wales was passed, increasing the number of members of the Council from thirty-six to fifty-four, of whom thirty-six were to be elective and eighteen nominee members. The extraordinary increase in the wealth and prosperity of the colony owing to the discovery of gold soon imparted new and unforeseen features to its political and social conditions. In 1851 a remonstrance was despatched by the Legislative Council of New South Wales to the Secretary of State for the Colonies, in which objection was taken to the form of Constitution which the Imperial authorities proposed to grant under the Act of 1850, on the grounds (a) that it did not place the control of all revenue and taxation entirely in the hands of the Colonial Legislature, (b) that all offices of trust and emolument should be filled by the Governor and Executive Council, unfettered by instructions from the Secretary of State for the Colonies, and (c) that plenary powers of legislation should be conferred on the Colonial Legislature. In 1852 the Secretary of State for the Colonies, in a despatch to the Governor of New South Wales, promised to give effect to the wishes of the Legislative Council, and suggested that the Legislative Council should proceed to frame a Constitution resembling that of Canada and based on a bi-cameral Legislature. A select committee of the Council was accordingly appointed to draft a Constitution, and as a result of the deliberations of this body the new Constitution was, on the 21st December, 1853, adopted by the Council and transmitted to the Secretary of State for the Colonies. As it contained provisions in excess of the powers conferred by the Act of 1850, the Bill could not receive the Royal assent, but had to be introduced into the Imperial Parliament. With some amendments the Bill was passed by the Imperial Government, and received the Royal assent on the 16th July, 1855. It is now known as the New South Wales Constitution Act 1855, and under its provisions a fully responsible system of government was granted. The entire management and control of Crown lands was conferred on the New South Wales Parliament, while the provisions of former Acts respecting the allowance and disallowance of Bills were preserved. Subject to the provisions of the Act, power to make laws amending the Constitution was given to the New South Wales Parliament. The first Parliament, under the new Constitution, was opened by Sir William T. Denison, on the 22nd May, 1856. The Constitution was amended by Acts passed in 1857, 1884 and 1890, these Acts being repealed and consolidated by the Constitution Amendment Act of 1902. The last amending Act was passed in 1916.

4. **Victoria.**—After the proclamation of the Australian Colonies Government Act of 1850, the old Legislative Council of New South Wales met on the 28th March, 1851, for the purpose of making electoral and judicial arrangements required to bring the new Act into force in Victoria. Two Acts were passed specially concerning Victoria. The first provided for the continuation of the powers and functions of all public officers resident within the Port Phillip District until removed or reappointed by the Government of Victoria. The other Act provided that the Legislative Council of Victoria should consist of thirty members, ten nominee and twenty elective. On the 1st July, 1851, writs for the election of the elective members of the new Legislative Council of Victoria were issued, and separation became complete. On the 15th July, Mr. La Trobe was appointed the

first Lieutenant-Governor of the colony. The powers and functions of the new Council were, under the Act of 1850, similar to those of the reorganized Legislative Council of New South Wales. The next important stage in the constitutional history of Victoria was that which was consummated by the attainment of a fully responsible system of government. In 1853 a despatch, similar to that received by the Governor of New South Wales (see above), was received by the Lieutenant-Governor of Victoria from the Secretary of State for the Colonies. A Constitution was drafted by a committee of the Legislative Council, and it was embodied in a Bill which was passed and reserved for the Queen's assent on 28th March, 1854. This Bill contained clauses similar to those of the New South Wales Bill relating to the assent of the Governor to bills and the Sovereign's power to disallow the same; to the sale and appropriation of Crown lands; and to the amendment of the Constitution by the Victorian Parliament. As the new Constitution contained provisions beyond those authorized by the Act of 1850, a special Enabling Act was necessary. The Bill was passed and assented to on the 16th July, 1855, and the new Constitution was proclaimed on the 23rd November following. Several amendments have since been made, chiefly with reference to the term of membership and the qualifications of members and electors. The last amending Act was passed in 1922.

5. Queensland.—As part of New South Wales, the Moreton Bay District enjoyed the benefits of responsible government under the Constitution Act of 1855. For electoral purposes the district was, in 1856, divided into eight electorates, returning nine members to the Legislative Assembly of New South Wales.

By an Act passed in 1842 the Queen was empowered to erect into a separate colony any part of the territory of New South Wales lying to the northward of 26° south latitude, which was altered by the Australian Colonies Government Act 1850 to 30° south latitude. By the New South Wales Constitution Act 1855 the power previously granted to alter the northern boundary of New South Wales was distinctly preserved, and Her Majesty was authorized, by letters patent, to erect into a separate colony any territory which might be so separated. It was further enacted that Her Majesty, either by such letters patent, or by Order in Council, might make provision for the government of any such new colony, and for the establishment of a Legislature therein, in manner as nearly resembling the form of government and legislature established in New South Wales as the circumstances of the new colony would permit. The separation was effected by letters patent dated the 6th June, 1859, and the Constitution of the new colony was embodied in an Order in Council of the same date.

The Order in Council provided that there should be within the colony of Queensland a Legislative Council and a Legislative Assembly, with the advice and consent of which Her Majesty should have the power to make laws for the peace, welfare, and good government of the colony in all cases whatsoever. The powers and functions granted to this Legislature were substantially the same as those granted to New South Wales and Victoria under their respective Constitution Acts, and similar restrictions were imposed. The first Parliament under the new Constitution was convened on the 29th May, 1859. There have been several amendments of the Constitution, the latest having been made in 1921.

6. South Australia.—The creation of South Australia as a Province has already been referred to above. In the exercise of the provisions of the Act by which the Province was created, a governor, a judge, seven commissioners, and other officials were appointed. The Governor, with the concurrence of the Chief Justice, the Colonial Secretary, and the Advocate-General, or two of them, was authorized to make laws and impose taxes. The control of the Crown lands was placed in the hands of the Commissioners. In 1841, the settlement being involved in financial difficulties, a loan was advanced by the British Government. Under an Act passed in 1842 the system of government was remodelled, the colonization commissioners were abolished, and the Province became a Crown colony. The Queen was empowered to constitute a nominated Legislative Council, consisting of the Governor and seven other persons resident in the colony, with power to make laws for the good government thereof. This system of government continued in force until the inauguration of a new scheme under the provisions of the Australian Colonies Government Act 1850, referred to above.

In 1853, the Legislative Council of South Australia, in pursuance of the powers conferred by the Act of 1850, passed a Bill to establish a bi-cameral Legislature for South

Australia. The Royal assent was, however, refused on the grounds that the Bill contained a provision limiting the right of the Crown in respect of the disallowance of Bills, which provision was in excess of the powers conferred by the Act of 1850. In 1855 a new Legislative Council, partly elective and partly nominee, having been duly constituted, a second Bill, based on the Tasmanian Constitution Bill, to create a bi-cameral Legislature, was passed and duly received the Royal assent in 1856. This Act, known as the South Australian Constitution Act 1856, confers no legislative powers except by reference to the Act of 1850. In order to ascertain the principal legislative powers and functions of the Parliament of South Australia reference must therefore be made to the Australian Colonies Government Act 1850, defining the legislative powers and functions of the Council for which it was substituted. The first session of the new Parliament commenced on the 22nd April, 1857, during the Governorship of Sir Richard Graves McDonnell.

The legislative powers of the South Australian Parliament have been considerably enlarged by several Imperial Acts. In 1855 an Act was passed authorizing the Legislature of each of the Australian colonies to sell, dispose of, and legislate with reference to Crown lands in the colony. In 1865 the Colonial Laws Validity Act removed the common law restriction which prevented colonial legislators from passing any law repugnant to the law of England. In 1873 the prohibition contained in the Australian Colonies Government Act 1850 was, by the Australian Colonies Duties Act, abolished so far as intercolonial duties were concerned. There have been a large number of amendments to the Constitution, the latest having been passed in 1921.

7. Western Australia.—In 1829 the first Imperial Act relating to the Government of Western Australia was passed. By that Act, the King in Council was empowered to make and constitute, and to authorize any three or more persons resident within the settlements to make and constitute laws, institutions, and ordinances for the peace, order, and good government of the settlements in Western Australia. By an Order in Council dated the 1st November, 1830, the first Executive Council was constituted, while in the following year a Legislative Council, which consisted at first solely of members of the Executive Council, was formed. This system of government remained unaltered for many years, though the number of members of both Councils was increased from time to time. In August, 1870, the nominee Legislative Council was dissolved, and writs were issued (under the Australian Colonies Government Act 1850, the provisions of which did not apply to Western Australia until that colony was able to defray its own expenses) for the election of a Council to consist of twelve elected and six nominated members. These numbers were again increased from time to time until the last Legislative Council under the old form of government, which expired on the 21st October, 1890, consisted of twenty-six members, of whom four were official members, five were nominees of the Crown, and seventeen were elected by the different constituencies. As far back as 1873 a movement was commenced in Western Australia for responsible government as it existed in the eastern colonies. In 1889 the Legislative Council was dissolved, and a general election took place, the principal question being the introduction of responsible government. A resolution in favour of the change was passed by the new Council without dissent, and a Constitution providing for the creation of a bi-cameral Legislature was accordingly drafted. In August, 1890, an enabling Bill received the Royal assent, and responsible government was proclaimed in the colony on the 21st October, 1890. Under this Act the Legislative Council was a nominative chamber, subject to the provisions that after the expiration of six years, or as soon as the colony acquired a population of 60,000, the Council should be constituted by election. The first Parliament under the new Constitution met on the 30th December, 1890. On the 18th July, 1893, the population of the colony being then over 60,000, the Legislature of Western Australia passed an Act to amend the Constitution, abolishing the nominee Council, and substituting one elected by the qualified inhabitants of the colony. The present Constitution of Western Australia differs but little from those of the other States of the Commonwealth. It has been amended by various Acts, the last of which was passed in 1921.

8. Tasmania.—Under an Order in Council dated the 14th June, 1825, and made in pursuance of the provisions of an Act passed in 1823, Van Diemen's Land, as it was officially known until the year 1853, was separated from New South Wales and was

proclaimed a separate colony. A Lieutenant-Governor was appointed, and an Executive and a Legislative Council were called into existence, the latter being on the same model as that introduced into the other colonies at the earliest stages of their constitutional progress. It was not until the Imperial Act of 1850 was passed, that a system of representative government was introduced into Tasmania. A Constitution Bill was drafted and passed by the Legislative Council, and was assented to and proclaimed on the 24th October, 1856.

The Constitution of South Australia was based upon that of Tasmania, and the remarks made above with reference to the Constitution of the former State apply equally to the Constitution of the latter State.

The first Parliament under the new Constitution was opened on the 2nd December, 1856. The Constitution has been amended by various Acts, the latest of which was passed in 1921.

9. Reservation of Bills.—The reservation of Bills passed by the Legislature of any State was formerly dealt with both by the instructions given to the State Governors and by various State Constitution Acts. The Australian States Constitution Act 1907 amended the law with respect to the reservation of Bills, and provided that the following Bills must be reserved for the signification of His Majesty's pleasure thereon, viz. :—Any Bill which (a) alters the Constitution of the Legislature of the State, or (b) affects the salary of the Governor of the State, or (c) is, under any Act of the Legislature of the State passed after the passing of the Australian States Constitution Act 1907, or under any provision contained in the Bill itself, required to be reserved. The Act does not, however, affect the reservation of Bills in accordance with any instructions given to the Governor of a State by His Majesty.

§ 7. The Federal Movement in Australia.

1. Early Stages in the Federal Movement.—A summary is given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its earliest inception to its consummation. Limits of space will permit of the insertion of a synopsis only in the present issue.

Notwithstanding that, owing to the circumstances of their growth, the initial tendency in Australia was naturally towards the individualistic evolution of the several settlements, from the earliest period there was a clear recognition of the importance of intercolonial reciprocity. Governor Fitzroy, in 1846, and Earl Grey, in 1847, saw that there were questions which affected "Australia collectively, the regulation of which in some uniform manner, and by some single authority, may be essential to the welfare of them all," and a "central legislative authority for the whole of the Australian colonies" was actually contemplated. Even so far back as 1849, a Privy Council Committee recommended a uniform tariff, and the constituting of one of the Governors as Governor-General of Australia, Sir Charles Fitzroy being actually appointed as "Governor-General of all Her Majesty's Australian Possessions." The office, however, was nominal rather than actual, and expired in 1861. Dr. Lang's idea of "a great federation of all the colonies of Australia" was put forward in 1852, and a Victorian committee in 1853 advocated the value of a General Assembly of Delegates for the whole of Australia.

The need of union was urged by the *Sydney Morning Herald* in 1854, and, although Wentworth sought in 1857 to bring about the creation of a Federal Assembly, a draft "Enabling Bill" proved unacceptable to Her Majesty's Government. In the same year Mr. (afterwards Sir) Charles Gavan Duffy secured the appointment of a select committee of the Victorian Legislative Assembly to consider the necessity of a federal union of the Australasian colonies. The need for such a union was unanimously affirmed, the general opinion being that it should not be longer delayed. In the same year, a select committee of the New South Wales Legislative Council also considered this question, fully recognising that antagonisms and jealousies were likely to arise through delay.

Union was in a fair way toward realization when the advent of the Cowper Administration destroyed all chance of attaining it, owing to the antagonism of Mr. Cowper and

Mr. (afterwards Sir) James Martin. South Australia, also in the same year, and Queensland in 1859, were both unfavourable to the federal scheme. A second attempt by Mr. Duffy to bring about a conference in 1860 failed also.

Tariff differences, however, compelled political attention to the matter, and in 1862 correspondence was opened up by South Australia regarding tariff uniformity. By means of intercolonial conferences between 1863 and 1880 some degree of uniformity in legislation and a measure of concerted administration were realized. In March, 1867, Mr. (afterwards Sir) Henry Parkes expressed himself as follows:—" . . . The time has arrived when these colonies should be united by some federal bond. . . . There are questions projecting themselves . . . which cannot be dealt with by . . . individual Governments. . . . I believe it will lead to a permanent federal understanding." A Bill passed, however, was shelved by the Home Government.

2. **The Federal Council.**—The conference of November-December, 1880, and January, 1881, recommended the creation of a Federal Council, believing that the time had not arrived for a Federal Constitution with a Federal Parliament. Until 1883, however, every effort proved abortive, but in November of that year a convention, at which the seven colonies and Fiji were represented, met in Sydney. A Bill to establish a Federal Council for Australasia, drafted by Mr. (later Sir) Samuel Griffith, was, after some modification by a committee of the convention, adopted. In July and August, 1884, the Crown was addressed, praying for the enactment of a Federal Council Act. New South Wales and New Zealand, however, held aloof, the view of Sir Henry Parkes being that a 'council' would impede the way for a sure and solid federation. The Bill introduced by the Earl of Derby in the House of Lords on the 23rd April, 1885, became law on the 14th August as "The Federal Council of Australasia Act 1885." The Council's career however, soon showed that it could not hope to be effective, and it met for the last time in January, 1899.

3. **Formative Stages of the Federal Movement.**—As early as 1878 the necessity for federal defence was vividly brought into Australian consciousness, and arrangements for naval protection were entered into with the Imperial Government. These were ratified by the Australasian Naval Force Act. Queensland, however, did not come into line until 1891.

Early in 1889, Sir Henry Parkes had confidentially suggested to Mr. Duncan Gillies the necessity for a Federal Parliament and Executive. Unable to accept the latter's suggestion that New South Wales should give its adhesion to the Federal Council, the former statesman urged the institution of "a National Convention for the purpose of devising and reporting upon an adequate scheme of Federal Government." This led to the Melbourne Conference of 6th February, 1890. It was at the banquet on this occasion that, in proposing "A United Australasia," Mr. James Service pointed out that the tariff question was "a lion in the path," which federationists must either slay, or by which they must be slain; in the reply to which Sir Henry Parkes made use of his historic phrase, *the crimson thread of kinship runs through us all*. Certain elements of doubt being expressed as to the motives underlying the movement, Sir Henry Parkes said:—"We desire to enter upon this work of Federation without making any condition to the advantage of ourselves, without any stipulation whatever, with a perfect preparedness to leave the proposed convention free to devise its own scheme, and, if a central Parliament comes into existence, with a perfect reliance upon its justice, upon its wisdom, and upon its honour . . . I think . . . an overwhelming majority of my countrymen . . . will approve of the grand step . . . uniting all the colonies under one form of beneficent government, and under one national flag."

The first National Australasian Convention, under Sir Henry Parkes' presidency, was convened on the 2nd March, 1891, all the colonies and New Zealand being represented. The Bill then drafted was considered by the Parliaments of New South Wales, Victoria, South Australia, and Tasmania, but not by those of Queensland, Western Australia, and New Zealand, and though the parliamentary process of dealing with the matter failed, federal sentiment was strengthening. The collapse of the "land boom" had made apparent how intimately the interests of each colony are related; and the dangers of disunion became impressively obvious. The Australian Natives' Association took up the federal cause with enthusiasm. Federation leagues were established, the issues were widely and intelligently discussed. The late Sir George Dibbs' unification scheme helped to make the issue a real one.

At the Conference of Premiers at Hobart on the 29th January, 1895, it was agreed that federation "was the great and pressing question of Australian politics," and that "the framing of a Federal Constitution" was an urgent duty. The resuscitation of the whole matter led to the passing of Enabling Acts. In New South Wales, the Act received the Royal assent on the 23rd December, 1895; South Australia anticipated this by three days; the Tasmanian Bill was passed on the 10th January, 1896, the Victorian on the 7th March, 1896; Western Australia fell into line on the 27th October. The "People's Federal Convention," held at Bathurst, N.S.W., in November, 1896, gave a considerable impulse to the movement; to wait longer for Queensland was considered unnecessary, and the 4th March, 1897, was fixed as the date for the election of federal representatives for New South Wales, Victoria, South Australia, and Tasmania. Western Australia followed suit, and on the 22nd March the representatives met at Adelaide.

The discussions made it evident that the federal point of view had advanced considerably. Constitutional, Finance, and Judiciary Committees were appointed, and a Bill drafted. This, reported to the Convention on the 22nd April, was adopted on the following day, and the Convention adjourned till September. The Parliaments of New South Wales, Victoria, South Australia, Tasmania, and Western Australia discussed the question before the Sydney Session of the Convention, which opened on the 2nd September, 1897. The business of the Convention involved the general reconsideration of the whole Bill, and the consideration of no less than 286 suggested amendments. This work gave a definite character to that of the Melbourne Session of 1898, extending from the 20th January to the 17th March, the necessity of reaching a final decision giving to its deliberations corresponding weight.

4. **Votes on the Question of Federation.**—Eleven weeks after this last convention, the first popular vote was taken on Federation in New South Wales, Victoria, South Australia, and Tasmania. Though the decision was overwhelming in favour of Federation in three of the States, and there was a distinct majority in its favour in New South Wales, the majority was legally insufficient. On the 22nd January, 1899, the Premiers of the six colonies met at Melbourne in a conference initiated by the Right Honourable G. H. Reid, P.C., and seven amendments were made in the Bill. This step virtually effected the solution of the few outstanding difficulties which could in any way be regarded as fundamental.

On the occasion of the second popular vote, Queensland also joined in, and the general majority in favour of Federation was more than doubled, that for New South Wales itself having been more than quadrupled when compared with the first vote. The following table shows the two results:—

VOTES FOR AND AGAINST FEDERATION.

Votes.			N.S.W.	Victoria.	Sth. Aust.	Tas.	Qld.	TOTALS.
1st Vote	{ For Federation ..		71,595	100,520	35,800	11,797	—	219,712
	{ Against „ ..		66,228	22,099	17,320	2,716	—	108,363
	{ Majority ..		5,367	78,421	18,480	9,081	—	111,349
2nd Vote	{ For Federation ..		107,420	152,653	65,990	13,437	38,488	377,988
	{ Against „ ..		82,741	9,805	17,053	791	30,996	141,386
	{ Majority ..		24,679	142,848	48,937	12,646	7,492	236,602

5. **Enactment of the Constitution.**—The Secretary of State for the Colonies (the Right Honourable Joseph Chamberlain) expressed the hope on the 22nd December, 1899, that a delegation of the federating colonies would visit England on the occasion of the submission of the Commonwealth Bill to the Imperial Parliament. The delegation consisted of Mr. (later Sir) Edmund Barton (N.S.W.), Mr. Alfred Deakin (Vic.), Mr. C. C. Kingston (S.A.), Sir P. O. Fysh (Tas.), and later Mr. S. H. Parker was appointed delegate for Western Australia, and Mr. W. P. Reeves for New Zealand. After discussion as to whether there should be some modification in the Bill, it was introduced into the House of Commons

on the 14th May ; the second reading was moved on the 21st of the same month ; the discussion in committee commenced on the 18th June ; and the Royal assent was given on the 9th July, 1900.

On the 31st July a referendum in Western Australia on the question of federating gave the result :—For, 44,800 ; against, 19,691 ; that is to say, a majority of 25,109 in favour of union. On the 21st August both Houses of Parliament in that State passed addresses praying that it might be included as an original State of the Commonwealth.

On the 17th September, 1900, Her Majesty Queen Victoria signed the proclamation declaring that on and after the first day of January, 1901, the people of New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia should be united in a Federal Commonwealth, under the name of the Commonwealth of Australia.

§ 8. Creation of the Commonwealth.

1. **The Constitution Act**—The Commonwealth of Australia Constitution Act, 63 and 64 Vict., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, as amended by the Constitution Alteration (Senate Elections) Act 1906, and the Constitution Alteration (State Debts) Act 1909 is given *in extenso* hereunder.

THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT, 63 & 64 VICT., CHAPTER 12.

An Act to constitute the Commonwealth of Australia. [9th July, 1900.]

WHEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established :

And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian Colonies and possessions of the Queen :

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :—

1. This Act may be cited as the Commonwealth of Australia Constitution Act.

2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.

3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.

4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this Act.

5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State ; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.

6. " The Commonwealth " shall mean the Commonwealth of Australia as established under this Act.

" The States " shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia, and South Australia, including the

northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States : and each of such parts of the Commonwealth shall be called "a State."

"Original States" shall mean such States as are parts of the Commonwealth at its establishment.

7. The Federal Council of Australasia Act, 1885, is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.

Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.

8. After the passing of this Act the Colonial Boundaries Act, 1895, shall not apply to any colony which becomes a State of the Commonwealth ; but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.

9. The Constitution of the Commonwealth shall be as follows :—

THE CONSTITUTION.

This Constitution is divided as follows :—

- Chapter I.—The Parliament :
 - Part I.—General :
 - Part II.—The Senate :
 - Part III.—The House of Representatives :
 - Part IV.—Both Houses of the Parliament :
 - Part V.—Powers of the Parliament :
- Chapter II.—The Executive Government :
- Chapter III.—The Judicature :
- Chapter IV.—Finance and Trade :
- Chapter V.—The States :
- Chapter VI.—New States :
- Chapter VII.—Miscellaneous :
- Chapter VIII.—Alteration of the Constitution.
- The Schedule.

CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution, such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue Fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General for the time being, or such person as the Queen may appoint to administer the Government of the Commonwealth ; but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any general election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an Original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in the State that which is prescribed by this Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for the State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of [the third year] *three years*,* and the places of those of the second class at the expiration of [the sixth year] *six years*,* from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.

The election to fill vacant places shall be made [in the year at the expiration of which] *within one year before** the places are to become vacant.

For the purpose of this section the term of service of a senator shall be taken to begin on the first day of [January] *July** following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of [January] *July** preceding the day of his election.

* As amended by section 2 of the Constitution Alteration (Senate Elections) 1906. The words in square brackets have been repealed; amendments are shown in italics.

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a senator to be the President of the Senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

19. A senator may, by writing addressed to the President, or to the Governor-General if there is no President or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth the Governor-General, shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

- (i) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shown by the latest statistics of the Commonwealth, by twice the number of the senators:

- (ii) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shown by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows :—

New South Wales	..	23	South Australia	..	6
Victoria	..	20	Tasmania	..	5
Queensland	..	8			

Provided that if Western Australia is an Original State, the numbers shall be as follows :—

New South Wales	..	26	South Australia	..	7
Victoria	..	23	Western Australia	..	5
Queensland	..	9	Tasmania	..	5

27. Subject to this Constitution, the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provision, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.*

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no Speaker or if he is absent from the Commonwealth the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows :—

- (i) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen :

* The franchise qualification was determined by the Commonwealth Franchise Act 1902.

- (ii) He must be a subject of the Queen, either natural-born or for at least five years naturalized under a law of the United Kingdom, or of a Colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the Speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorized by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

44. Any person who—

- (i) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power : or
- (ii) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of a State by imprisonment for one year or longer : or
- (iii) Is an undischarged bankrupt or insolvent : or
- (iv) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth : or
- (v) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons :

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives.

But sub-section iv. does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's

navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

45. If a senator or member of the House of Representatives—

- (i) Becomes subject to any of the disabilities mentioned in the last preceding section : or
- (ii) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to bankrupt or insolvent debtors : or
- (iii) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State :

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year, to be reckoned from the day on which he takes his seat.*

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

50. Each House of the Parliament may make rules and orders with respect to—

- (i) The mode in which its powers, privileges, and immunities may be exercised and upheld :
- (ii) The order and conduct of its business and proceedings either separately or jointly with the other House.

PART V.—POWERS OF THE PARLIAMENT.†

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to:—

- (i) Trade and commerce with other countries, and among the States :
- (ii) Taxation ; but so as not to discriminate between States or parts of States :
- (iii) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth :
- (iv) Borrowing money on the public credit of the Commonwealth :
- (v) Postal, telegraphic, telephonic, and other like services :
- (vi) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
- (vii) Lighthouses, lightships, beacons and buoys :
- (viii) Astronomical and meteorological observations :
- (ix) Quarantine :
- (x) Fisheries in Australian waters beyond territorial limits :
- (xi) Census and statistics :

* By the Parliamentary Allowances Act 1907, the amount of the allowance was increased to £600 a year ; and by the Parliamentary Allowances Act 1920 to £1,000 a year. (The latter Act also apportioned special allowances to the President of the Senate ; the Speaker of the House of Representatives ; the Chairmen of Committees in both Houses ; and the Opposition Leaders in both Houses.)

† Particulars of proposed laws which were submitted to referenda are given in Chapter III., General Government.

- (xii) Currency, coinage, and legal tender :
- (xiii) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :
- (xiv) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
- (xv) Weights and measures :
- (xvi) Bills of exchange and promissory notes :
- (xvii) Bankruptcy and insolvency :
- (xviii) Copyrights, patents of inventions and designs, and trade marks :
- (xix) Naturalization and aliens :
- (xx) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :
- (xxi) Marriage :
- (xxii) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
- (xxiii) Invalid and old-age pensions :
- (xxiv) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the courts of the States :
- (xxv) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
- (xxvi) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
- (xxvii) Immigration and emigration :
- (xxviii) The influx of criminals :
- (xxix) External affairs :
- (xxx) The relations of the Commonwealth with the islands of the Pacific :
- (xxxi) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :
- (xxxii) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :
- (xxxiii) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :
- (xxxiv) Railway construction and extension in any State with the consent of that State :
- (xxxv) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :
- (xxxvi) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :
- (xxxvii) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :
- (xxxviii) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :
- (xxxix) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

52. The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order, and good government of the Commonwealth, with respect to—

- (i) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :
- (ii) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :
- (iii) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licences, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed laws so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriation.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provisions therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the House in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.*

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which, until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall be transferred to the Commonwealth :—

Posts, telegraphs, and telephones :	|	Lighthouses, lightships, beacons, and buoys :
Naval and military defence :	|	Quarantine.

But the departments of customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

* By the Ministers of State Acts 1915 and 1917, the Ministers of State may exceed seven, but shall not exceed nine. £15,300 annually was allotted by these Acts for their salaries; and £800 per annum each was added by the Parliamentary Allowances Act 1920.

CHAPTER III.—THE JUDICATURE.

71. The judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other Courts created by the Parliament—

- (i) Shall be appointed by the Governor-General in Council :
- (ii) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii) Shall receive such remuneration as the Parliament may fix ; but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i) Of any Justice or Justices exercising the original jurisdiction of the High Court :
 - (ii) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :
 - (iii) Of the Inter-State Commission, but as to questions of law only :
- and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States shall be applicable to appeals from them to the High Court.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits inter se of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits inter se of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

- (i) Arising under any treaty :
- (ii) Affecting consuls or other representatives of other countries :
- (iii) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party :
- (iv) Between States, or between residents of different States, or between a State and a resident of another State :
- (v) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth :

the High Court shall have original jurisdiction

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

- (i) Arising under this Constitution, or involving its interpretation :
- (ii) Arising under any laws made by the Parliament :
- (iii) Of Admiralty and maritime jurisdiction :
- (iv) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

- (i) Defining the jurisdiction of any federal court other than the High Court :
- (ii) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States :
- (iii) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon ; and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entitled to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his services with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth ; but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of the transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of a State, and who is, by consent of the Governor of the State with the advice of the

Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

- (i) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary:
- (ii) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth:
- (iii) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section: if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament:
- (iv) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.

89. Until the imposition of uniform duties of customs—

- (i) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.
- (ii) The Commonwealth shall debit to each State—
 - (a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance, as at the time of transfer, of any department transferred from the State to the Commonwealth;
 - (b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.
- (iii) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs and thereafter until the Parliament otherwise provides—

(i) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State :

(ii) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth ; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned whenever the Colony, or the Government or an officer of the Colony, is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

101. There shall be an Inter-State Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.*

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connexion with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Inter-State Commission.

103. The members of the Inter-State Commission—

- (i) Shall be appointed by the Governor-General in Council :
- (ii) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Inter-State Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts [as existing at the establishment of the Commonwealth],† or a proportion thereof according to the respective numbers of their people as shown by the latest statistics of the Commonwealth and may convert, renew, or consolidate such debts, or any part thereof; and the State shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State; and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

* The Commission was brought into existence in 1913, under Act No. 33 of 1912, by the appointment of Commissioners for seven years. This period has expired, but no fresh appointments have been made.

† Under Section 2 of the Constitution Alteration (State Debts) 1909, the words in square brackets are omitted.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the government of the State.

111. The Parliament of a State may surrender any part of the State to the Commonwealth; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State; but the net produce of all charges so levied shall be for the use of the Commonwealth; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision.

CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.

The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorize the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen ; but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.

128. This Constitution shall not be altered except in the following manner :—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law, it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

SCHEDULE.

OATH.

I, *A.B.*, do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. So HELP ME GOD !

AFFIRMATION.

I, *A.B.*, do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.
(NOTE.—*The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

2. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901 : it reads as follows :—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign, intituled “ An Act to constitute the Commonwealth of *Australia*,” it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One year after the passing of this Act, the people of *New South Wales, Victoria, South Australia, Queensland, and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 9. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May following by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister.

The following table gives the number and duration of Parliaments since Federation :—

COMMONWEALTH PARLIAMENTS, 1901 TO 1923.

Number of Parliament.	Date of Opening.	Date of Dissolution.
First	29th April, 1901 ..	23rd November, 1903
Second	2nd March, 1904 ..	12th October, 1906
Third	20th February, 1907 ..	19th February, 1910
Fourth	1st July, 1910 ..	23rd April, 1913
Fifth	9th July, 1913 ..	30th July, 1914(a)
Sixth	8th October, 1914 ..	26th March, 1917
Seventh	14th June, 1917 ..	3rd November, 1919
Eighth	26th February, 1920 ..	6th November, 1922
Ninth	28th February, 1923 ..	

(a) On this occasion, the Governor-General, acting on the advice of the Ministry, and under section 57 of the Constitution, granted a dissolution of both the Senate and the House of Representatives, this being the first occasion since Federation on which a dissolution of both Houses had occurred.

2. **Governors-General and Ministries.**—The following statements show the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:—

(a) GOVERNORS-GENERAL.

- Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
- Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.
- Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908; recalled 31st July, 1911.
- Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O. Sworn 31st July, 1911; recalled 16th May, 1914.
- Rt. Hon. SIR RONALD CRAUFURD MUNRO FERGUSON (afterwards VISCOUNT NOVAR OF RAITH), P.C., G.C.M.G. Sworn 18th May, 1914; recalled 5th October, 1920.
- Rt. Hon. HENRY WILLIAM BARON FORSTER OF LEPE, P.C., G.C.M.G. Sworn 6th October, 1920.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General * ..	Hon. ALFRED DEAKIN.
Home Affairs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8/'03).
Treasurer	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/'03).*
Trade and Customs ..	{ Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Defence	{ Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/'03).
Postmaster-General ..	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/'03).
Vice-President Executive Council	{ Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/'01).
Without Portfolio ..	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (17/1/'01 to 7/8/'03).
	{ Hon. JAMES GEORGE DRAKE (from 7/8/'03).
	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1/'01).*
	{ Hon. JAMES GEORGE DRAKE (5/2/'01 to 7/8/'03).
	{ Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8/'03).
	Hon. RICHARD EDWARD O'CONNOR, K.C.
	{ Hon. N. E. LEWIS (to 23/4/'01).†
	{ Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4/'01 to 7/8/'03).

(c) FIRST DEAKIN ADMINISTRATION, 23rd September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasurer	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.*
Attorney-General	Hon. JAMES GEORGE DRAKE.
Postmaster-General	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence	Hon. AUSTIN CHAPMAN.
Vice-President Executive Council	Hon. THOMAS PLAYFORD.

(d) WATSON ADMINISTRATION, 26th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. JOHN CHRISTIAN WATSON.
External Affairs	Hon. WILLIAM MORRIS HUGHES.‡
Attorney-General	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs	Hon. EGERTON LEE BATCHELOR.
Trade and Customs	Hon. ANDREW FISHER.§
Defence	Hon. ANDERSON DAWSON.
Postmaster-General	Hon. HUGH MAHON.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.

* Created Lord Forrest of Bunbury, 1918.

† K.C.M.G., 1902.

‡ P.C., 1916.

§ P.C., 1911.

(e) REID-MCLEAN ADMINISTRATION, 17th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. GEORGE HOUSTON REID, P.C., K.C.*
Trade and Customs	Hon. ALLAN McLEAN.
Attorney-General	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C.
Treasurer	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Hon. DUGALD THOMSON.
Defence	Hon. JAMES WHITESIDE McCAY.†
Postmaster-General	Hon. SYDNEY SMITH.
Vice-President Executive Council	Hon. JAMES GEORGE DRAKE.

(f) SECOND DEAKIN ADMINISTRATION, 4th July,, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs	HON. ALFRED DEAKIN.
Attorney-General	{ Hon. ISAAC ALFRED ISAACS, K.C. (to 12/10/'06).
	{ Hon. LITTLETON ERNEST GROOM (from 12/10/'06).
Trade and Customs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 30/7/'07).
	{ Hon. AUSTIN CHAPMAN (from 30/7/'07).
Treasurer	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 30/7/'07).‡
	{ Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07).
Postmaster-General	{ Hon. AUSTIN CHAPMAN (to 30/7/'07).
	{ Hon. SAMUEL MAUGER (from 30/7/'07).
Defence	{ Hon. THOMAS PLAYFORD (to 24/1/'07).
	{ Hon. THOMAS THOMSON EWING (from 24/1/'07).§
Home Affairs	{ Hon. LITTLETON ERNEST GROOM (to 12/10/'06).
	{ Hon. THOMAS THOMSON EWING (from 12/10/'06 to 24/1/'07).§
	{ Hon. JOHN HENRY KEATING (from 24/1/'07).
Vice-President Executive Council	{ Hon. THOMAS THOMSON EWING (to 12/10/'06).§
	{ Hon. JOHN HENRY KEATING (from 12/10/'06 to 20/2/'07).
	{ Hon. ROBERT WALLACE BEST (from 20/2/'07).§
Honorary Ministers	{ Hon. J. H. KEATING (from 5/7/'05 to 12/10/'06).
	{ Hon. S. MAUGER (from 12/10/'06 to 30/7/'07).
	{ Hon. J. HUME COOK (from 28/1/'08).

(g) FIRST FISHER ADMINISTRATION, 12th November 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.||
Attorney-General	Hon. WILLIAM MORRIS HUGHES.¶
External Affairs	Hon. EGERTON LEE BATCHELOR.
Home Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. JOSIAH THOMAS.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Vice President Executive Council	Hon. GREGOR MCGREGOR.
Honorary Minister	Hon. JAMES HUTCHISON.

(h) THIRD DEAKIN ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without Portfolio)	Hon. ALFRED DEAKIN.
Defence	Hon. JOSEPH COOK.**
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.‡
Trade and Customs	Hon. SIR ROBERT WALLACE BEST, K.C.M.G.
External Affairs	Hon. LITTLETON ERNEST GROOM.
Attorney-General	Hon. PATRICK MCMAHON GLYNN.
Postmaster-General	Hon. SIR JOHN QUICK.
Home Affairs	Hon. GEORGE WARBURTON FULLER.
Vice-President Executive Council	Hon. EDWARD DAVIS MILLEN.
Honorary Minister	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

* K.C.M.G., 1909; G.C.M.G., 1911; G.C.B., 1916. † K.C.M.G., 1918. ‡ Created Lord Forrest of Bunbury, 1918. § K.C.M.G., 1908. || P.C., 1911. ¶ P.C., 1916. ** P.C., 1914; G.C.M.G., 1918.

(i) SECOND FISHER ADMINISTRATION, 29th April, 1910, to 24th June, 1913.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.*
Attorney-General	Hon. WILLIAM MORRIS HUGHES.†
External Affairs	{ Hon. EGERTON LEE BATCHELOR (died Oct., 1911). Hon. JOSIAH THOMAS (from 14/10/'11).
Postmaster-General	{ Hon. JOSIAH THOMAS (to 14/10/'11). Hon. CHARLES EDWARD FRAZER (from 14/10/'11).
Defence	Hon. GEORGE FOSTER PEARCE.**
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Home Affairs	Hon. KING O'MALLEY.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.
Honorary Ministers	{ Hon. EDWARD FINDLEY. Hon. CHARLES EDWARD FRAZER (to 14/10/'11). Hon. ERNEST ALFRED ROBERTS (from 23/10/'11).

(j) COOK ADMINISTRATION, 24th June, 1913, to 17th September, 1914.

DEPARTMENTS.	MINISTERS.
Home Affairs	Hon. JOSEPH COOK.‡
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.§
Attorney-General	Hon. WILLIAM HILL IRVINE, K.C.||
Defence	Hon. EDWARD DAVIS MILLEN.
External Affairs	Hon. PATRICK McMAHON GLYNN, K.C.
Trade and Customs	Hon. LITTLETON ERNEST GROOM.
Postmaster-General	Hon. AGAR WYNNE.
Vice-President Executive Council	Hon. JAMES HIERS MCCOLL.
Honorary Ministers	{ Hon. JOHN SINGLETON CLEMONS. Hon. WILLIAM HENRY KELLY.

(k) THIRD FISHER ADMINISTRATION, 17th September, 1914, to 27th October, 1915.

DEPARTMENTS.	MINISTERS.
Treasurer	Rt. Hon. ANDREW FISHER, P.C.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.†
Defence	Hon. GEORGE FOSTER PEARCE.**
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
External Affairs	{ Hon. JOHN ANDREW ARTHUR (died December, 1914). Hon. HUGH MAHON (from 14/12/'14).
Home Affairs	Hon. WILLIAM OLIVER ARCHIBALD.
Postmaster-General	Hon. WILLIAM GUTHRIE SPENCE.
Minister for the Navy	Hon. JENS AUGUST JENSEN (from 12/7/'15).
Vice-President Executive Council	Hon. ALBERT GARDINER.
Assistant Ministers	{ Hon. HUGH MAHON (to 14/12/'14). Hon. JENS AUGUST JENSEN (to 12/7/'15). Hon. EDWARD JOHN RUSSELL.

(l) FIRST HUGHES ADMINISTRATION from 27th October, 1915, to 14th November, 1916.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Hon. WILLIAM MORRIS HUGHES.†
Defence	Hon. GEORGE FOSTER PEARCE.**
Trade and Customs	{ Hon. FRANK GWYNNE TUDOR (to 14/9/'16). Hon. WILLIAM MORRIS HUGHES (from 29/9/'16).
Treasurer	Hon. WILLIAM GUY HIGGS.¶
Minister for the Navy	Hon. JENS AUGUST JENSEN.
Home Affairs	Hon. KING O'MALLEY.
External Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. WILLIAM WEBSTER.
Vice-President Executive Council	Hon. ALBERT GARDINER.¶
Assistant Minister	Hon. EDWARD JOHN RUSSELL.¶

* P.C., 1911.
Bunbury, 1918.† P.C., 1916.
|| K.C.M.G., 1914.‡ P.C., 1914 ; G.C.M.G., 1918.
¶ Resigned 27/10/'16.§ Created Lord Forrest of
** P.C., 1921.

(m) SECOND HUGHES ADMINISTRATION from 14th Nov., 1916, to 17th Feb., 1917.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Rt. Hon. WILLIAM MORRIS HUGHES, P.C.
Minister for Defence	Hon. GEORGE FOSTER PEARCE.||
Minister for the Navy	Hon. JENS AUGUST JENSEN.
Postmaster-General	Hon. WILLIAM WEBSTER.
Treasurer	Hon. ALEXANDER POYNTON.
Minister for Trade and Customs..	Hon. WILLIAM OLIVER ARCHIBALD.
Minister for Home Affairs	Hon. FREDERICK WILLIAM BAMFORD.
Minister for Works	Hon. PATRICK JOSEPH LYNCH.
Vice-President Executive Council	Hon. WILLIAM GUTHRIE SPENCE.
Assistant Ministers	(Hon. EDWARD JOHN RUSSELL.
	(Hon. WILLIAM HENRY LAIRD SMITH.

(n) AUSTRALIAN NATIONAL WAR GOVERNMENT from 17th February, 1917, to 8th January, 1918.

DEPARTMENTS.	MINISTERS.
Prime Minister and Attorney-General	Rt. Hon. WILLIAM MORRIS HUGHES, P.C.
Minister for the Navy	Rt. Hon. JOSEPH COOK, P.C.*
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.†
Minister for Defence	Hon. GEORGE FOSTER PEARCE.||
Vice-President Executive Council {	Hon. EDWARD DAVIS MILLEN.
	Hon. LITTLETON ERNEST GROOM (from 16/11/'17).
Minister for Repatriation	Hon. EDWARD DAVIS MILLEN (from 28/9/'17).
Minister for Works and Railways	Hon. WILLIAM ALEXANDER WATT.‡
Minister for Home and Territories	Hon. PATRICK MCMAHON GLYNN, K.C.
Minister for Trade and Customs..	Hon. JENS AUGUST JENSEN.
Postmaster-General	Hon. WILLIAM WEBSTER.
Honorary Ministers	(Hon. LITTLETON ERNEST GROOM.
	(Hon. EDWARD JOHN RUSSELL.

(o) AUSTRALIAN NATIONAL WAR GOVERNMENT from 10th January, 1918, to 9th February, 1923.

DEPARTMENTS.	MINISTERS.
Prime Minister and Minister for External Affairs	Rt. Hon. WILLIAM MORRIS HUGHES, P.C., K.C.
Attorney-General	{ Rt. Hon. WILLIAM MORRIS HUGHES, P.C., K.C. (to 21/12/'21).
	{ Hon. LITTLETON ERNEST GROOM (from 21/12/'21).
Minister for the Navy	{ Rt. Hon. JOSEPH COOK, P.C.* (to 28/7/'20).
	{ Hon. WILLIAM HENRY LAIRD SMITH (from 28/7/'20 to 21/12/'21).
	{ Rt. Hon. LORD FORREST, P.C., G.C.M.G. (to 27/3/'18; died 4th September, 1918).
Treasurer	{ Hon. WILLIAM ALEXANDER WATT‡ (from 27/3/'18; resigned 15/6/'20).
	{ Rt. Hon. JOSEPH COOK, P.C.* (from 28/7/'20 to 21/12/'21).
	{ Hon. STANLEY MELBOURNE BRUCE, M.C.§ (from 21/12/'21).
Minister for Defence	{ Hon. GEORGE FOSTER PEARCE|| (to 21/12/'21).
Minister for Repatriation	{ Hon. WALTER MASSY GREENE (from 21/12/'21).
	{ Hon. EDWARD DAVIS MILLEN.
Minister for Works and Railways	{ Hon. WILLIAM ALEXANDER WATT.‡
	{ Hon. LITTLETON ERNEST GROOM (from 27/3/'18 to 21/12/'21).
	{ Hon. RICHARD WITTY FOSTER (from 21/12/'21).
Minister for Home and Territories	{ Hon. PATRICK MCMAHON GLYNN, K.C. (to 3/2/'20).
	{ Hon. ALEXANDER POYNTON (from 4/2/'20 to 21/12/'21).
	{ Rt. Hon. GEORGE FOSTER PEARCE, P.C. (from 21/12/'21).
Minister for Trade and Customs	{ Hon. JENS AUGUST JENSEN (to 13/12/'18).
	{ Hon. WILLIAM ALEXANDER WATT‡ (from 13/12/'18).
	{ Hon. WALTER MASSY GREENE (from 17/1/'19 to 21/12/'21).
	{ Hon. ARTHUR STANISLAUS RODGERS (from 21/12/'21).
Postmaster-General	{ Hon. WILLIAM WEBSTER (to 3/2/'20).
	{ Hon. GEORGE HENRY WISE (from 4/2/'20 to 21/12/'21).
Minister for Health	{ Hon. ALEXANDER POYNTON (from 21/12/'21).
	{ Hon. WALTER MASSY GREENE (from 10/3/'21).
Vice-President Executive Council	{ Hon. LITTLETON ERNEST GROOM (to 27/3/'18).
	{ Hon. EDWARD JOHN RUSSELL (from 27/3/'18 to 21/12/'21).
	{ Hon. JOHN EARLE (from 21/12/'21).
	{ Hon. EDWARD JOHN RUSSELL (to 27/3/'18).
	{ Hon. ALEXANDER POYNTON (from 26/3/'18 to 4/2/'18).
	{ Hon. GEORGE HENRY WISE (from 26/3/'18 to 4/2/'18).
	{ Hon. WALTER MASSY GREENE (from 26/3/'18 to 17/1/'19).
Honorary Ministers	{ Hon. RICHARD BEAUMONT ORCHARD (from 26/3/'18 to 31/1/'19).
	{ Hon. SIR GRANVILLE DE LAUNE RYRIE, K.C.M.G., C.B., V.D. (from 4/2/'20).
	{ Hon. WILLIAM HENRY LAIRD SMITH (from 4/2/'20 to 28/7/'20).
	{ Hon. ARTHUR STANISLAUS RODGERS (from 28/7/'20 to 21/12/'21).
	{ Hon. HECTOR LAMOND (from 21/12/'21).

* G.C.M.G., 1918. † Created Lord Forrest of Bunbury, 1918. ‡ P.C., 1920. § P.C., 1923. || P.C., 1921.

(p) BRUCE-PAGE GOVERNMENT from 9th February, 1923.

DEPARTMENTS.	MINISTERS.
Prime Minister and Minister for External Affairs	Rt. Hon. STANLEY MELBOURNE BRUCE, P.C., M.C.
Treasurer	Hon. EARLE CHRISTMAS GRAFTON PAGE.
Minister for Home and Territories	Rt. Hon. GEORGE FOSTER PEARCE, P.C.
Attorney-General	Hon. LITTLETON ERNEST GROOM.
Postmaster-General	Hon. WILLIAM GERRAND GIBSON.
Minister for Trade and Customs and Minister for Health ..	Hon. AUSTIN CHAPMAN.
Minister for Works and Railways	Hon. PERCY GERALD STEWART.
Minister for Defence	Hon. ERIC KENDALL BOWDEN.
Vice-President of the Executive Council	Hon. LLEWELYN ATKINSON.
Honorary Ministers	{ Hon. REGINALD VICTOR WILSON. Hon. THOMAS WILLIAM CRAWFORD.

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in Chapter III., General Government.

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament up to the end of the 1922 session is indicated in alphabetical order in "Vol. XX. of the Acts of the Parliament of the Commonwealth of Australia, passed during the year 1922, with Tables, Appendix, and Indexes." A "Chronological Table of Acts passed from 1901 to 1922, showing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation up to December, 1922, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement, from which Acts which have been repealed or which are no longer in force have been omitted:—

COMMONWEALTH LEGISLATION—ANALYTIC TABLE.*

Section of Constitution.	Short Title of Commonwealth Act.
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AMENDMENT OF THE CONSTITUTION.

Constitution Alteration (Senate Elections) 1906.
Constitution Alteration (State Debts) 1909.

PARLIAMENTARY AND ELECTORAL LAW.

8—30	PARLIAMENTARY FRANCHISE— Commonwealth Electoral Act 1918–1922.
9—34	ELECTIONS— Commonwealth Electoral Act 1902–1911.† Commonwealth Electoral Act 1918–1922. Senate Elections Act 1903–1922.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES— Representation Act 1905. Representation Act 1916. Northern Territory Representation Act 1922.
47	DISPUTED ELECTIONS AND QUALIFICATIONS— Commonwealth Electoral Act 1918–1922, ss. 183–201.
48	ALLOWANCES TO MEMBERS— Parliamentary Allowances Act 1920. Northern Territory Representation Act 1922.
49	PRIVILEGES OF PARLIAMENT— Parliamentary Papers Act 1908.

* This table has been prepared by Sir Robert Garran, Solicitor-General of the Commonwealth.

† With the exception of s. 210 of the *Commonwealth Electoral Act* 1902, and s. 18 of the *Commonwealth Electoral Act* 1905, the *Commonwealth Electoral Act* 1902–1911 has been repealed by the *Commonwealth Electoral Act* 1918. See *Commonwealth Gazette*, 25th November, 1918, p. 2257, 21st March, 1919, p. 401, and 14th November, 1920, p. 2277.

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued.*Section of
Constitution.

Short Title of Commonwealth Act.

GENERAL LEGISLATION.

- 51 (i) TRADE AND COMMERCE—EXTERNAL AND INTERSTATE—
 Australian Industries Preservation Act 1906–1910 [*Trusts and Dumping*].
 Commerce (Trade Descriptions) Act 1905.
 Customs Act 1901–1922.
 Customs Tariff (Industries Preservation) Act 1921–1922.
 Enemy Contracts Annulment Act 1915.
 Freight Arrangements Act 1915–1917.
 Navigation Act 1912–1920.
 Norfolk Island Act 1913 (s. 15).
 Northern Territory Acceptance Act 1910–1919 (s. 13).
 River Murray Waters Act 1915–1920.
 Sea Carriage of Goods Act 1904 [*Bills of Lading*].
 Seamen's Compensation Act 1911.
 Secret Commissions Act 1905.
 Spirits Act 1906–1918.
 Sugar Purchase Act 1915–1917.
 Trading with the Enemy Act 1914–1921.
 War Precautions Act Repeal Act 1920–1922.
- (ii) TAXATION—
Machinery Acts—
 Beer Excise Act 1901–1918.
 Customs Act 1901–1922.
 Customs Tariff (Industries Preservation) Act 1921–1922.
 Distillation Act 1901–1918.
 Entertainment Tax Assessment Act 1916.
 Estate Duty Assessment Act 1914–1922.
 Excise Act 1901–1918.
 Excise Procedure Act 1907.
 Income Tax Assessment Act 1915–1918.
 Land Tax Assessment Act 1910–1916.
 Spirits Act 1906–1918.
 War-time Profits Tax Assessment Act 1917–1918.
Taxing Acts—
 Customs Tariff 1902 [*Section 5 and Schedule repealed by Customs Tariff 1908*].
 Customs Tariff 1921–1922.
 Customs Tariff (Industries Preservation) Act 1921–1922.
 Customs Tariff (New Zealand Preference) 1922.
 Customs Tariff (South African Preference) 1906; affected by *Customs Tariff 1908 (s. 9)** and by *Customs Tariff 1921–1922 (s. 15)*.
 Customs Tariff (Sugar) 1922.
 Customs Tariff Validation Acts 1917 and 1919; affected by *Customs Tariff 1921 (s. 12 (2))*.
 Entertainments Tax Act 1916–1922.
 Estate Duty Act 1914.
 Excise Tariff 1902; amended by *Sugar Rebate Abolition Act 1903*, *Excise Tariff 1905**, *Excise Tariff (Amendment) 1906**, *Excise Tariff 1908**, and *Excise (Sugar) 1910*.
 Excise Tariff 1906 [*Agricultural Machinery*]; 1906 [*Spirits*].
 Excise Tariff 1921.
 Income Tax Acts 1915, 1916, 1917, 1918, 1919, 1920, 1921 and 1922.
 Land Tax Act 1910–1922.
 War-time Profits Tax Act 1917.
- (iii) BOUNTIES ON PRODUCTION OR EXPORT—
 Bounties Act 1907–1912.
 Iron and Steel Bounty Act 1918–1921.
 Iron and Steel Products Bounty Act 1922.
 Meat Export Bounties Act 1922.
 Shale Oil Bounty Act 1917–1922.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued.*Section of
Constitution.

Short Title of Commonwealth Act.

GENERAL LEGISLATION—*continued.*

- 51 (iv) | BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMONWEALTH—
Commonwealth Bank Act 1911–1920.
Commonwealth Inscribed Stock Act 1911–1918.
Funding Arrangements Act 1921.
Immigration Loan Act 1922.
Loan Act 1911–1914, 1912–1914, 1913–1914, 1914, 1915, 1918, 1919,
1920, 1921, 1921 (No. 2), 1922.
Loans Redemption and Conversion Act 1921.
Loans Securities Act 1919.
Loans Sinking Fund Act 1918.
Repatriation Loan Act 1921.
States Loan Act 1916; 1917.
Sugar Purchase Act 1915–1920.
Tasmanian Loan Redemption Act 1910.
Treasury Bills Act 1914–1915.
War Gratuity Acts 1920.
War Loan Act (No. 1) 1915; (No. 2) 1915; (No. 3) 1915; (No. 1)
1916; 1917; 1918; 1920.
War Loan (United Kingdom) Act 1914–1917; 1915–1917; (No. 2)
1916.
War Loan Securities Repurchase Act 1918.
War Precautions Act Repeal Act 1920–1922.
- (v) | POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES—
Pacific Cable Act 1911.
Post and Telegraph Act 1901–1916.
Post and Telegraph Rates Act 1902–1920.
Postal Rates Act 1910.
Purchase Telephone Lines Acquisition Act 1911.
Tasmanian Cable Rates Act 1906.
Telegraph Act 1909.
Wireless Telegraphy Act 1905–1919.
- (vi) | NAVAL AND MILITARY DEFENCE—
General—
Control of Naval Waters Act 1918.
Deceased Soldiers' Estates Act 1918–1919.
Defence Act 1903–1918.
Defence Lands Purchase Act 1913.
Defence Retirement Act 1922.
Naval Agreement Act 1903–1912.
Naval Defence Act 1910–1918.
Telegraph Act 1909.
War Legislation—
Australian Imperial Force Canteens Fund Act 1920.
Australian Soldiers' Repatriation Act 1920–1922.
Defence (Civil Employment) Act 1918–1922.
Enemy Contracts Annulment Act 1915.
Legal Proceedings Control Act 1919.
Moratorium Act 1919.
Termination of the Present War (Definition) Act 1919.
Trading with the Enemy Act 1914–1921.
Treaties of Peace (Austria and Bulgaria) Act 1920.
Treaties of Washington Act 1922.
Treaty of Peace (Germany) Act 1919–1920.
Treaty of Peace (Hungary) Act 1921.
War Gratuity Acts 1920.
War Precautions Act Repeal Act 1920–1922.
War Service Homes Act 1918–1920.
War Service Homes Commission Validating Act 1921.
Wheat Storage Act 1917.

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.
GENERAL LEGISLATION— <i>continued.</i>	
51 (vii)	LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS— Lighthouses Act 1911–1919.
(viii)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.
(ix)	QUARANTINE— Quarantine Act 1908–1920.
(xi)	CENSUS AND STATISTICS— Census and Statistics Act 1905–1920.
(xii)	CURRENCY, COINAGE, AND LEGAL TENDER— Coinage Act 1909. Commonwealth Bank Act 1911–1920.
(xiii)	BANKING, OTHER THAN STATE BANKING, ETC. Commonwealth Bank Act 1911–1920.
(xiv)	INSURANCE— Life Assurance Companies Act 1905. Marine Insurance Act 1909.
(xvi)	BILLS OF EXCHANGE AND PROMISSORY NOTES— Bills of Exchange Act 1909–1912.
(xviii)	COPYRIGHT, PATENTS, DESIGNS AND TRADE MARKS— Copyright Act 1912. Customs Act 1901–1922 (s. 52 (a), 57). Designs Act 1906–1912. Patents Act 1903–1921. Patents, Trade Marks, and Designs Act 1910. Trade Marks Act 1905–1922.
(xix)	NATURALIZATION AND ALIENS— Aliens Registration Act 1920. Immigration Act 1901–1920. Nationality Act 1920–1922. War Precautions Act Repeal Act 1920–1922.
(xxiii)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908–1920.
(xxiv)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— Service and Execution of Process Act 1901–1922.
(xxv)	RECOGNITION OF STATE LAWS, RECORDS, ETC. State Laws and Records Recognition Act 1901.
(xxvi)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Commonwealth Electoral Act 1918–1922 (s. 39). Pacific Island Labourers Act 1901–1906.
(xxvii)	IMMIGRATION AND EMIGRATION— Contract Immigrants Act 1905. Emigration Act 1910. Immigration Act 1901–1920. Pacific Island Labourers Act 1901–1906. Passports Act 1920. War Precautions Act Repeal Act 1920–1922.
(xxviii)	INFLUX OF CRIMINALS— Immigration Act 1901–1920 (s. 3 (ga), (gb)).
(xxix)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909. Nauru Island Agreement Act 1919. Treaties of Washington Act 1922.
(xxx)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901–1906. Nauru Island Agreement Act 1919. New Guinea Act 1920.

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.
GENERAL LEGISLATION— <i>continued.</i>	
51 (xxxi)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— Defence Lands Purchase Act 1913. Kalgoorlie to Port Augusta Railway Lands Act 1918–1920. Lands Acquisition Act 1906–1916 ; 1912. Lands Acquisition (Defence) Act 1918. Northern Territory (Administration) Act 1910. Purchase Telephone Lines Acquisition Act 1911. Seat of Government Act 1908. Seat of Government Acceptance Act 1909 ; 1922. Seat of Government (Administration) Act 1910 (s. 10). War Service Homes Act 1918–1920 (s. 16).
(xxxii)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903–1918 (ss. 64–66, 80, 124).
(xxxiv)	RAILWAY CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Commonwealth Railways Act 1917. Kalgoorlie to Port Augusta Railway Act 1911–1912.
(xxxv)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Arbitration (Public Service) Act 1920. Commonwealth Conciliation and Arbitration Act 1904–1921. Industrial Peace Acts 1920.
(xxxix)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901–1918. Acts Interpretation Act 1904–1916. Air Navigation Act 1920. Amendments Incorporation Act 1905–1918. Arbitration (Public Service) Act 1920. Committee of Public Accounts Act 1913–1920 ; 1917. Commonwealth Inscribed Stock Act 1911–1918. Commonwealth Public Service Act 1902–1918 ; 1922. Commonwealth Public Service (Acting Commissioner) Act 1916. Commonwealth Public Works Committee Act 1913–1914 ; 1917. Commonwealth Salaries Act 1907. Crimes Act 1914–1915. Defence Retirement Act 1922. Evidence Act 1905. Excise Procedure Act 1907. Institute of Science and Industry Act 1920. Jury Exemption Act 1905–1922. Maternity Allowance Act 1912. Returned Soldiers' Woollen Company Loan Act 1921. Royal Commissions Act 1902–1912. Rules Publication Act 1903–1916. Solicitor-General Act 1916. South Australian Farmers' Agreement Act 1922. Statutory Declarations Act 1911–1922. Superannuation Act 1922. Treaties of Washington Act 1922. War Precautions Act Repeal Act 1920–1922. Westralian Farmers' Agreement Act 1920 ; 1921.
EXECUTIVE GOVERNMENT.	
65	NUMBER OF MINISTERS— Ministers of State Act 1917.

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.
EXECUTIVE GOVERNMENT—<i>continued.</i>	
67	APPOINTMENT AND REMOVAL OF OFFICERS— Australian Soldiers Repatriation Act 1920–1922 (ss. 7–21). Commonwealth Public Service Act 1902–1918 ; 1922. Commonwealth Public Service (Acting Commissioner) Act 1916. Commonwealth Railways Act 1917 (ss. 5–15, 46–54). Defence Act 1903–1918 (s. 63). Defence (Civil Employment) Act 1918–1922. High Commissioners Act 1909 (ss. 8, 9). Institute of Science and Industry Act 1920 (ss. 7, 14). New Guinea Act 1920 (ss. 6–12). Norfolk Island Act 1913 (ss. 7, 9). Northern Territory Acceptance Act 1910–1919 (ss. 11, 12). Papua Act 1905–1920 (s. 19). Solicitor-General Act 1916. Superannuation Act 1922 (ss. 61–75). Tariff Board Act 1921 (ss. 5–9). War Service Homes Act 1918–1920 (ss. 5–15). War Service Homes Commissioner Validating Act 1921.
THE JUDICATURE.	
71–80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— High Court Procedure Act 1903–1915. Judiciary Act 1903–1920.
73	APPELLATE JURISDICTION OF THE HIGH COURT— Estate Duty Assessment Act 1914–1922 (s. 28). Income Tax Assessment Act 1922 (s. 51). Inter-State Commission Act 1912 (s. 42). Judiciary Act 1903–1920. Land Tax Assessment Act 1910–1916 (s. 46). Norfolk Island Act 1913 (s. 11). Papua Act 1905–1920 (s. 43). War-time Profits Tax Assessment Act 1917–1918 (s. 29).
76	ORIGINAL JURISDICTION OF THE HIGH COURT— (1) <i>In matters arising under the Constitution or involving its interpretation—</i> Judiciary Act 1903–1920 (ss. 23, 30). (2) <i>In matters arising under Laws made by the Parliament—</i> Australian Industries Preservation Act 1906–1910 (ss. 10, 11, 13, 21, 22, and 26). Commonwealth Conciliation and Arbitration Act 1904–1921 (s. 31). Commonwealth Electoral Act 1918–1922 (ss. 183, 202). Copyright Act 1912 (s. 37 (2)). Customs Act 1901–1922 (ss. 221, 227, 245). Defence Act 1903–1918 (s. 91). Estate Duty Assessment Act 1914–1922 (ss. 39–41). Excise Act 1901–1918 (ss. 109, 115, 134). Income Tax Assessment Act 1922 (ss. 50–53). Industrial Peace Acts 1920. Judiciary Act 1903–1920. Land Tax Assessment Act 1910–1916 (s. 44). Lands Acquisition Act 1906–1916 (ss. 10, 11, 24, 36–39, 45, 46, 50, 54, 56, 59). Navigation Act 1912–1920 (ss. 383, 385). Patents Act 1903–1921 (ss. 47, 58, 67, 75–77, 84–87A, 111). Post and Telegraph Act 1901–1916. Referendum (Constitution Alteration) Act 1906–1919 (ss. 27, 31). Trade Marks Act 1905–1922 (ss. 34, 35, 44, 45, 70–72, 95). Trading with the Enemy Act 1914–1921 (ss. 9c, 9p). War-time Profits Tax Assessment Act 1917–1918 (s. 28).
(iii)	(3) <i>In matters of Admiralty and Maritime Jurisdiction—</i> Judiciary Act 1903–1920 (ss. 30, 30A).

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued.*

Section of Constitution.	Short Title of Commonwealth Act.
THE JUDICATURE— <i>continued.</i>	
77 (ii)	EXCLUDING JURISDICTION OF STATE COURTS— Judiciary Act 1903–1920 (ss. 38, 38A, 39, 57, 59).
(iii)	INVESTING STATE COURTS WITH FEDERAL JURISDICTION— Commonwealth Conciliation and Arbitration Act 1904–1921 (ss. 44–46, 48). Commonwealth Electoral Act 1918–1922 (ss. 44, 58, 184). Copyright Act 1912 (ss. 14–17). Customs Act 1901–1922 (ss. 221, 227, 245). Defence Act 1903–1918 (s. 91). Designs Act 1906–1912 (ss. 25, 39). Estate Duty Assessment Act 1914–1922 (s. 24). Excise Act 1901–1918 (ss. 109, 115, 134). Income Tax Assessment Act 1922 (s. 50). Judiciary Act 1903–1920 (ss. 17, 39, 68). Land Tax Assessment Act 1910–1916 (s. 44). Navigation Act 1912–1920 (ss. 91, 92, 318–320, 380–383, 385, 395). Patents Act 1903–1921 (ss. 30, 47, 58, 67, 75–77, 84–87A, 111). Post and Telegraph Act 1901–1916 (ss. 29, 43). Trade Marks Act 1905–1922 (ss. 34, 35, 44, 45). War-time Profits Tax Assessment Act 1917–1918 (s. 28).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE— Judiciary Act 1903–1920 (ss. 56–67).
FINANCE.	
81	APPROPRIATION OF MONEYS— Appropriation and Supply Acts 1901–1914. Audit Act 1901–1920 (ss. 36–37, 62A). Funding Arrangements Act 1921. Loans Redemption and Conversion Act 1921.
83	PAYMENT OF MONEYS— Audit Act 1901–1920 (ss. 31–37, 62A).
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE— Surplus Revenue Acts 1908, 1909, 1910.
94	DISTRIBUTION OF SURPLUS REVENUE— Surplus Revenue Acts 1908, 1909, 1910.
96	ASSISTANCE TO STATES— Tasmania Grant Act 1922.
97	AUDIT OF PUBLIC ACCOUNTS— Audit Act 1901–1920.
98	NAVIGATION AND SHIPPING— Navigation Act 1912–1920. River Murray Waters Act 1915–1920. Sea-Carriage of Goods Act 1904.
100	USE OF WATERS— River Murray Waters Act 1915–1920.
101–104	INTER-STATE COMMISSION— Inter-State Commission Act 1912.
THE STATES.	
118	RECOGNITION OF STATE LAWS, RECORDS, ETC. State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903–1918 (s. 51).

COMMONWEALTH LEGISLATION—ANALYTIC TABLE—*continued*.

Section of Constitution.	Short Title of Commonwealth Act.
TERRITORIES.	
122	<p>GOVERNMENT OF TERRITORIES—</p> <p>Jervis Bay Territory Acceptance Act 1915.</p> <p>Nauru Island Agreement Act 1915.</p> <p>New Guinea Act 1920.</p> <p>Norfolk Island Act 1913.</p> <p>Northern Territory Acceptance Act 1910–1919.</p> <p>Northern Territory (Administration) Act 1910.</p> <p>Northern Territory Representation Act 1922.</p> <p>Papua Act 1905.</p> <p>Patents Act 1903–1921 (s. 4A).</p> <p>Pine Creek to Katherine River Railway Act 1913.</p> <p>Pine Creek to Katherine River Railway Survey Act 1912.</p> <p>Seat of Government Acceptance Act 1909.</p> <p>Seat of Government (Administration) Act 1910.</p> <p>Wireless Telegraphy Act 1905–1919.</p>
MISCELLANEOUS.	
125	<p>SEAT OF GOVERNMENT—</p> <p>Seat of Government Act 1908.</p> <p>Seat of Government Acceptance Act 1909 ; 1922.</p> <p>Seat of Government (Administration) Act 1910.</p>
128	<p>ALTERATION OF CONSTITUTION—</p> <p>Constitution Alteration (Senate Elections) 1906.</p> <p>Constitution Alteration (State Debts) 1909.</p> <p>Referendum (Constitution Alteration) Act 1906–1919.</p>

CHAPTER II.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—(i) *General.* The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or, including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait. The extreme points are “Steep Point” on the west, “Cape Byron” on the east, “Cape York” on the north, “Wilson’s Promontory” on the south, or, if Tasmania be included, “South East Cape.”

(ii) *Tropical and Temperate Regions.* Of the total area of Australia nearly 40 per cent. lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S., its correct value for 1920 is 23° 26' 58.89", and it decreases about 0.47" per annum, the areas within the tropical and temperate zones are approximately as follows :—

AUSTRALIA—AREAS OF TROPICAL AND TEMPERATE REGIONS.

(STATES AND TERRITORY PARTIALLY WITHIN TROPICS.)

Areas.	Queensland.	Western Australia.	Northern Territory.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone	359,000	364,000	426,320	1,149,320
Within Temperate Zone	311,500	611,920	97,300	1,020,720
Ratio of Tropical part to whole State ..	0.535	0.373	0.814	0.530
Ratio of Temperate part to whole State	0.465	0.627	0.186	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386).

2. **Area of Australia compared with Areas of other Countries.**—It is not always realized that the area of Australia is nearly as great as that of the United States of America, that it is four-fifths of that of Canada, that it is nearly one-fourth of the area of the whole of the British Empire, that it is more than three-fourths of the whole area of Europe, and that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador. This great area, coupled with a limited population, renders the solution of the problem of Australian development a particularly difficult one. The areas of Australia and of other countries are given in the following table :—

AREA OF AUSTRALIA AND OF OTHER COUNTRIES.

Country.	Area.	Country.	Area.
	Sq. miles.		Sq. miles.
Continental Divisions—		ASIA—continued.	
Europe	3,858,361	Independent Arabia ..	1,000,000
Asia	16,705,618	Feudatory Indian States ..	709,555
Africa	12,154,812	Far Eastern Republic ..	652,740
North and Central America		Persia	628,000
and West Indies ..	8,601,799	Dutch East Indies ..	561,661
South America ..	7,366,287	Turkey	273,202
Australasia and Polynesia	3,422,017	Japan (and Dependencies)	261,276
		Afghanistan	245,000
Total, exclusive of Arctic		Siam	198,900
and Antarctic Confs.	52,108,894	Mesopotamia	143,250
		Syria	114,530
Europe—		Philippine Islands (inclusive	
Russia	1,657,560	of Sulu Archipelago) ..	114,400
France	212,659	Laos	96,500
Spain	194,783	Oman	82,000
Germany	183,468	Bokhara	79,000
Sweden	173,035	British Borneo and Sarawak	73,106
Lithuania	154,491	Kurdistan and Turkish Ar-	
Finland	149,586	menia	71,990
Poland	149,042	Cambodia	57,900
Norway	124,964	Nepál	54,000
Rumania	122,282	Tonking	40,530
United Kingdom ..	121,633	Annam	39,758
Italy	110,632	Azerbaijan	33,970
Jugo-Slavia	95,628	Federated Malay States ..	27,506
Czecho-Slovakia ..	54,264	Smyrna	25,801
Greece	41,933	Georgia	25,760
Bulgaria	40,656	Ceylon	25,481
Iceland	39,709	Khiva	24,000
Hungary	35,654	Malay Protectorate (includ-	
Portugal	35,490	ing Johore)	23,486
Austria	30,766	Cochin China	22,000
Latvia	25,000	Bhután	20,000
Esthonia	23,160	Armenia	15,240
Denmark (Exclusive of Ice-		Aden and Dependencies ..	9,005
land)	17,144	Palestine	9,000
Switzerland	15,976	Timor, etc. (Portuguese In-	
Netherlands	12,582	dian Archipelago) ..	7,330
Belgium	11,744	Brunei	4,000
Albania	11,500	Cyprus	3,584
Turkey	10,882	Andaman and Nicobar Is-	
Luxemburg	999	lands	2,895
Danzig	709	Kiauchau (including Neu-	
Andorra	191	tral Zone)	2,700
Malta	118	Goa, Damao, and Diu ..	1,638
Liechtenstein	65	Straits Settlement ..	1,600
San Marino	38	Sokotra	1,382
Monaco	8	Hong Kong and Depend-	
Fiume	8	encies	391
Gibraltar	2	Wei-hai-wei	285
		Bahrein Islands	250
Total, Europe ..	3,858,361	French India (Pondicherry,	
		etc.)	196
Asia—		Kwang Chau Wan ..	190
Russia	5,913,877	Maldiv Islands ..	115
China and Dependencies ..	3,913,560	Macao, etc.	4
British India	1,093,074		
		Total, Asia	16,705,618

AREA OF AUSTRALIA AND OF OTHER COUNTRIES—*continued.*

Country.	Area.	Country.	Area.
Africa—	Sq. miles.	AFRICA—<i>continued.</i>	Sq. miles.
French Sahara ..	1,544,000	Réunion	970
Sudan	1,014,400	Ifni	965
French Equatorial Africa	982,049	Fernando Po, etc. ..	814
Belgian Congo	909,654	Mauritius and Dependencies	809
Angola	484,800	St. Thomas and Principe	
Union of South Africa ..	473,096	Islands	360
Rhodesia	440,000	Seychelles	156
Portuguese East Africa ..	428,132	St. Helena	47
Tripolitania and Cyrenaica	406,000	Ascension	34
Senegambia and Niger ..	366,700		
Tanganyika Territory ..	365,000	Total, Africa	12,154,812
Abyssinia	350,000		
Egypt	350,000		
Territory of the Niger ..	347,400		
Mauretania	344,967	North and Central America	
Nigeria and Protectorate	332,000	and West Indies—	
South-west Africa	322,400	Canada	3,729,665
Bechuanaland Protectorate	275,000	United States, (exclusive of	
Kenya Colony and Protec-		Alaska, etc.)	3,026,789
torate	245,060	Mexico	767,198
Madagascar	228,000	Alaska	590,884
Morocco	223,000	Newfoundland and Labra-	
Algeria (including Algerian		dor	162,734
Sahara)	222,180	Nicaragua	49,200
Kameroun (French)	166,489	Guatemala	48,290
Upper Volta	154,400	*Greenland	46,740
Italian Somaliland	139,430	Honduras	44,275
Ivory Coast	121,976	Cuba	44,215
Uganda Protectorate	110,300	Costa Rica	23,000
Rio de Oro and Adrar ..	109,200	Santo Domingo	19,332
French Guinea	95,218	Salvador	13,183
Gold Coast Protectorate		Haiti	10,204
(with Nth. Territories)	80,000	British Honduras	8,592
Senegal	74,112	Bahamas	4,404
British Somaliland	68,000	Jamaica	4,207
Tunis	50,000	Porto Rico	3,435
Eritrea	45,800	Trinidad and Tobago ..	1,977
Dahomey	42,460	Guadeloupe and Dependen-	
Liberia	40,000	cies	722
Nyassaland Protectorate	39,573	Leeward Islands	715
Kameroun (British)	31,000	Windward Islands	527
Sierra Leone and Protector-		Curaçao and Dependencies	403
ate	31,000	Martinique	385
Togoland (French)	21,893	Turks and Caicos Islands ..	224
Portuguese Guinea	13,940	Barbados	166
Togoland (British)	12,600	Virgin Islands of U.S.A.,	
Basutoland	11,716	late Danish West Indies	132
Spanish Guinea (Rio Muni,		St. Pierre and Miquelon ..	93
etc.)	9,470	Cayman Islands	89
Spanish Morocco	7,700	Bermudas	19
Swaziland	6,678		
French Somali Coast	5,790	Total, N. and C. America	
Gambia and Protectorate	4,134	and W. Indies	8,601,799
Cape Verde Islands	1,480		
Comoro Islands, Mayotte,		South America—	
etc.	1,440	Brazil	3,275,510
Zanzibar	1,020	Argentine Republic	1,153,119
		Peru	722,461

* Danish colony only. Total area has been estimated as between 827,000 and 850,000 square miles.

AREA OF AUSTRALIA AND OF OTHER COUNTRIES—continued.

Country.	Area.	Country.	Area.
SOUTH AMERICA—continued.		AUSTRALASIA AND POLYNESIA	
	Sq. miles.		Sq. miles.
Bolivia	514,155	—continued.	
Colombia (exclusive of Panama)	440,846	British Solomon Islands ..	11,000
Venezuela	398,594	Fiji	7,435
Chile	289,829	New Caledonia and Depen-	
Paraguay	175,673	dencies	7,237
Ecuador	116,000	Hawaii	6,449
British Guiana	89,480	New Hebrides	5,500
Uruguay	72,153	French Establishments in	
Dutch Guiana	46,060	Oceania	1,520
Panama	32,380	Territory of Western Samoa	1,260
French Guiana	32,000	Marianne, Caroline, and	
Falkland Islands	6,500	Marshall Islands	960
South Georgia	1,000	Tonga	385
Panama Canal Zone	527	Guam	225
		Gilbert and Ellice Islands	208
		Samoa (U.S.A. part)	102
Total, South America ..	7,366,287	Norfolk Island	13
		Nauru Island	12
Australasia and Polynesia—			
Commonwealth of Australia	2,974,581	Total, Australasia and	
Dutch New Guinea	121,339	Polynesia	3,422,017
New Zealand and Depen-			
dencies	103,861		
Papua	90,540		
Territory of New Guinea	89,390	British Empire	13,257,584

The figures quoted in the table have been extracted from the Statesman's Year-Book for 1922, but, as several of the boundaries have not yet been finally adjusted since the war, modifications will in some instances be necessary.

3. Areas of Political Subdivisions.—As already stated, Australia consists of six States and the Northern and Federal Territories. The areas of these, and their proportions of the total of Australia, are shown in the following table :—

AUSTRALIA—AREA OF STATES AND TERRITORIES.

State or Territory.	Area.	Percentage on Total.
	Sq. miles.	
New South Wales	309,432	10.40
Victoria	87,884	2.96
Queensland	670,500	22.54
South Australia	380,070	12.78
West Australia	975,920	32.81
Tasmania	26,215	0.88
Northern Territory	523,620	17.60
Federal Territory	940	0.03
Total	2,974,581	100.00

4. **Coastal Configuration.**—(i) *General.* There are no striking features in the configuration of the coast; the most remarkable indentations are the Gulf of Carpentaria on the north, and the Great Australian Bight on the south. The Cape York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1, an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(ii) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, of each State and of the whole continent, and the area per mile of coast-line, are shown in the following table:—

AUSTRALIA—COAST LINE AND AREA PER MILE THEREOF.

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales(a)	700	443	South Australia	1,540	247
Victoria ..	680	129	Western Australia	4,350	224
Queensland ..	3,000	223	Continent (b) ..	11,310	261
Northern Territory	1,040	503	Tasmania ..	900	29

(a) Including Federal Territory.

(b) Area 2,948,366 square miles.

For the entire Commonwealth of Australia this gives a coast-line of 12,210 miles and an average of 244 square miles for one mile of coast-line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast-line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(iii) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. **Geographical Features of Australia.**—In each of the earlier issues of this Year Book fairly complete information has been given concerning some special geographical element. The nature of this information and its position in the various Year Books can be readily ascertained on reference to the special index following the general index at the end of this work.

6. **Fauna, Flora, Geology, and Seismology of Australia.**—Special articles dealing with these features have appeared in previous Year Books, but limits of space naturally preclude their repetition in each volume. As pointed out in 5 *supra*, however, the nature and position of these articles can be readily ascertained from the special index.

§ 2. Climate and Meteorology of Australia.*

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book No. 3, pp. 79, 80.) In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organization of the Commonwealth Bureau of Meteorology, and a résumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

2. **Meteorological Publications.**—The following publications are issued daily from the Central Meteorological Bureau, viz.:—(i) Weather charts. (ii) Rainfall maps.

* Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R. Met. Soc.

(iii) Bulletins, Victorian and Interstate, showing pressure, temperature, wind, rain, cloud extent, and weather. Similar publications are also issued from the divisional offices in each of the State Capitals.

Commencing with January, 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., is being published. Complete rainfall and other climatological data are published in annual volumes of meteorological statistics for each State separately.

The first text book of Australian meteorology, "Climate and Weather of Australia," was published in 1913.

In addition, fifteen Bulletins of Climatology have been published, particulars of which are given in preceding issues of the Official Year Book (see No. 12, page 54).

3. General Description of Australia.—A considerable portion (0.530) of three divisions of Australia is north of the tropic of Capricorn—that is to say, within the States of Queensland and Western Australia, and the Northern Territory, no less than 1,149,320 square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of Australia within the temperate zone, however, is 1,825,261 square miles; thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole more temperate.

The altitudes of the surface of Australia range up to a little over 7,300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

On the coast, the rainfall is often abundant and the atmosphere moist, but in some portions of the interior it is very limited, and the atmosphere dry. The distribution of forest, therefore, with its climatic influence, is very uneven. In the interior, in places, there are fine belts of trees, but there are large areas also which are treeless, and where the air is hot and parched in summer. Again, on the coast, even so far south as latitude 35°, the vegetation is tropical in its luxuriance, and to some extent also in character. Climatologically, therefore, Australia may be said to present a great variety of features.

4. Meteorological Divisions.—(i) *General.* The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east longitude; (b) between divisions II. and III., a line starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., a line from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., a line from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., a line starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., a line from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) Tasmania constitutes division V.

The population included within these boundaries at the Census of the 4th April, 1921, was approximately as follows:—

Division	I.	II.	III.	IV.	V.
Population	332,000	500,000	824,000	1,915,000	1,866,000

In these divisions, the order in which the capitals occur is as follows:—(a) Perth, (b) Adelaide, (c) Brisbane, (d) Sydney, (e) Melbourne, and (f) Hobart; and the climatological and meteorological statistics relating to the capital cities are dealt with herein in accordance with that order.

(ii) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows :—

SPECIAL CLIMATOLOGICAL STATIONS—AUSTRALIA.

Locality.	Height above Sea Level.	Latitude. S.	Longitude. E.	Locality.	Height above Sea Level.	Latitude. S.	Longitude. E.
	Feet.	deg. min.	deg. min.		Feet.	deg. min.	deg. min.
Perth ..	197	31 57	115 50	Darwin ..	97	12 28	130 51
Adelaide ..	140	34 56	138 35	Daly Waters	691	16 16	133 23
Brisbane ..	137	27 28	153 2	Alice Springs	1,926	23 38	133 37
Sydney ..	133	33 52	151 12	Dubbo ..	870	32 18	148 35
Melbourne ..	115	37 49	144 58	Laverton, W.A.	1,530	28 40	122 23
Hobart ..	177	42 53	147 20	Coolgardie ..	1,389	30 57	121 10

5. *Temperatures.*—(i) *Comparisons with other Countries.* In respect of Australian temperatures generally, it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa so far south as latitude 33°, while in Australia it reaches only so far south as latitude 30°, thus showing that, on the whole, Australia has latitude for latitude a more temperate climate than other places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included, for in the United States the 70° isotherm extends in several of the western States so far north as latitude 41°. In Europe, the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia, nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Darwin, for example, the difference in the means for the hottest and coldest months is only 8.2°, and the extreme readings for the year, or the highest maximum in the hottest month and the lowest reading in the coldest month, show a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced manner inland.

(ii) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shows that, in Australia, as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° continuously for days and weeks. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria—the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100°, even in the hottest of seasons.

Tasmania as a whole enjoys a most moderate and equable range of temperature throughout the year, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts.

(iii) *Monthly Maximum and Minimum Temperatures.* The normal monthly maximum and minimum temperatures can be best shown by means of graphs, which exhibit the nature of the fluctuation of each for all available years. In the diagram herein for nine representative places in Australia, the upper heavy curves show the mean maximum, and the lower heavy curves the mean minimum temperatures based upon daily observations, while the thin curves show the relative humidities.

6. Relative Humidity.—Next after temperature the degree of humidity may be regarded as of outstanding importance as an element of climate. The characteristic differences of relative humidity between the various capitals of Australia call for special remark. For nine representative places the variations of temperature are shown on the graph herein, which gives results based upon daily observations of the dry and wet bulb thermometers for all available years. In the case of the capital cities the curves are accompanied by curves of humidity. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for lengthy continuous periods. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, or the percentage of aqueous vapour actually existing on the total possible if the atmosphere were saturated. From the detailed humidity results for the State capitals given in the tables hereinafter, it will be seen that, in respect of relative humidity, Sydney and Hobart have the first place, while Brisbane, Melbourne, Perth, and Adelaide follow in the order stated, Adelaide being the driest. It will be noted also that the *relative humidity* is ordinarily but not invariably great when the temperature is low.

7. Evaporation.—(i) *General.* The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure, and movement. In Australia the question is of perhaps more than ordinary importance, since in its drier regions water has often to be conserved in “tanks”* and dams. The magnitude of the economic loss by evaporation will be appreciated from the tabular records herein, which show that the yearly amount varies from about 33 inches at Hobart to 94 inches at Alice Springs in the centre of the Continent.

(ii) *Monthly Evaporation Curves.* The curves showing the mean monthly evaporation in various parts of the Commonwealth disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shown on the diagram giving also rainfalls.

(iii) *Loss by Evaporation.* In the interior of Australia the possible evaporation is greater than the actual rainfall. Since the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Further, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation. These matters are naturally of more than ordinary concern in the drier districts of Australia.

8. Rainfall.—(i) *General.* As even a casual reference to climatological maps indicating the distribution of rainfall and prevailing direction of wind would clearly show, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth’s surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east trade and prevailing westerly winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude, and, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains upon which the rain-laden winds blow from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia, where the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

* In Australia artificial storage ponds or reservoirs are called “tanks.”

The westerly winds, which skirt the southern shores, are responsible for the very reliable, although generally light to moderate, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(ii) *Factors determining Distribution and Intensity of Rainfall.* (iii) *Time of Rainfall.* In Year Book No. 6 (see pp. 72 to 74) some notes were given of the various factors governing the distribution, intensity, and period of Australian rainfall.

(iv) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, between Port Douglas and Cardwell, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 145 and 168 inches. The maximum and minimum falls there are :—Goondi, 241.53 in 1894 and 67.88 inches in 1915, or a range of 173.65 inches ; Innisfail, 211.24 in 1894 and 69.87 inches in 1902, or a range of 141.37 inches ; Harvey's Creek, 254.77 in 1921 and 80.47 inches in 1902, or a range of 174.30 inches.

On four occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910, when 204.82 inches were registered. The record at this station covers a period of 29 years.

Harvey's Creek in the shorter period of 23 years has three times exceeded 200 inches, the total for 1921 being 254.77 inches, and at the South Johnstone Sugar Experiment Station, where a gauge has recently been established, 202.52 inches were recorded in 1921.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where the fall rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia were at one time regarded as the driest part of Australia, but authentic observations in recent years over the settled districts in the east of that State show that the annual average is from 10 to 12 inches.

(v) *Quantities and Distribution of Rainfall.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent subject to capricious monsoonal rains, as the comparisons hereunder will show. The general distribution is best seen from the rainfall map herein which shows the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shown in the following table :—

AVERAGE ANNUAL RAINFALL DISTRIBUTION.

Average Annual Rainfall.	N.S.W. (a)	Victoria.	Queens- land.	South Australia.	Northern Territory	Western Australia.	Tas. mania. (b)	Total. (b)
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	44,997	nil	91,012	317,600	138,190	513,653	nil	1,105,452
10—15 ,,	77,268	19,912	87,489	33,405	141,570	232,815	nil	592,459
15—20 ,,	57,639	12,626	112,738	14,190	62,920	89,922	937	350,972
20—30 ,,	77,202	29,317	213,779	13,827	93,470	95,404	7,559	530,558
30—40 ,,	30,700	14,029	69,880	984	40,690	40,750	4,588	201,621
Over 40 ,,	22,566	12,000	95,602	64	46,780	3,376	10,101	190,489
Total area ..	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

(a) Including Federal Capital Territory. (b) Over an area of 3,030 square miles no records are available.

Referring first to the capital cities, the complete records of which are given in the next table, it will be seen that Sydney, with a normal rainfall of 48.17 inches, occupies the chief place ; Brisbane, Perth, Melbourne, Hobart and Adelaide following in that order, Adelaide with 21.08 inches being the driest. The extreme range from the wettest to the driest year is greatest at Brisbane (72.09 inches) and least at Adelaide (19.48 inches).

In order to show how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. (See map.)

The figures for Darwin, typical of the Northern Territory, show that nearly the whole of the rainfall occurs there in the summer months, while little or none falls in the middle of the year. The figures for Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October for the former, and in November for the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with a maximum in the autumn; the averages during the last six months are fair, and moderately uniform. Generally it may be said that approximately one-third of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 or more inches, the remaining two-thirds averaging from about 10 to 20 inches.

(vi) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are clearly indicated in the graphs herein. Inspection thereof will show how large is the evaporation when water is fully exposed to the direct rays of the sun and to wind.

(vii) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions. As pointed out in 4 *ante*, the capitals are dealt with in the order in which they occur in the adopted meteorological divisions.

RAINFALL—AUSTRALIAN CAPITAL CITIES, 1901 TO 1922.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.
1901	36.75	122	..	18.01	124	..	38.48	110	..	40.10	149	..	27.45	113	..	25.11	149	..
2	27.06	93	..	16.02	123	..	16.17	87	..	43.07	180	..	23.08	102	..	21.85	150	..
3	35.69	140	..	25.47	134	..	49.27	136	..	38.62	173	..	28.43	130	..	25.86	139	..
4	34.35	125	..	20.31	117	..	33.23	124	..	45.93	158	..	29.72	128	..	22.41	139	..
5	34.61	116	..	22.28	131	..	36.76	108	..	31.89	160	..	25.64	129	..	32.09	168	..
6	32.37	121	..	26.51	127	..	42.85	125	..	35.03	145	..	22.29	114	..	23.31	155	..
7	40.12	132	..	17.78	125	..	31.46	119	..	31.32	132	..	22.26	102	..	25.92	166	..
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	167	43.41	17.72	130	25.36	16.50	148	23.29
9	39.11	107	..	27.69	138	..	34.06	111	..	32.45	177	..	25.86	171	..	27.29	170	..
1910	37.02	135	..	24.62	116	..	49.00	133	..	46.91	160	..	24.61	167	..	25.22	205	..
11	23.38	108	..	15.99	127	..	35.21	128	..	50.24	155	..	36.61	168	..	26.78	193	..
12	27.85	123	..	19.57	116	..	41.30	114	..	47.51	172	..	20.37	157	..	23.14	181	..
13	38.28	141	..	18.16	102	..	40.81	115	..	57.70	141	..	21.17	157	..	19.36	165	..
14	20.21	123	..	11.39	91	..	33.99	141	..	56.42	149	..	18.57	129	..	15.42	154	..
15	43.61	164	..	19.38	117	..	25.66	93	..	34.83	117	..	20.95	167	..	20.91	196	..
16	35.16	128	..	28.16	142	..	52.80	136	..	44.91	161	..	38.04	170	..	43.39	203	..
17	45.64	146	..	28.90	153	..	40.92	127	..	52.40	151	..	30.57	171	..	30.62	214	..
18	39.58	138	34.98	17.41	107	21.13	24.95	121	37.87	42.99	149	46.64	27.13	160	26.39	26.04	179	25.82
19	30.66	120	..	17.21	108	..	19.36	96	..	58.71	152	..	24.89	141	..	22.48	153	..
20	40.35	124	..	26.70	119	..	39.72	122	..	43.42	159	..	28.27	162	..	18.00	182	..
21	41.09	135	..	22.64	100	..	54.31	167	..	43.34	110	..	29.76	154	..	18.04	159	..
22	31.86	135	..	23.20	117	..	35.82	109	..	39.35	136	..	25.02	151	..	28.27	189	..
Aver.	..	..	33.86	..	..	21.08	..	..	45.33	..	..	48.17	..	..	26.23	..	..	23.65
No. of Yrs.	..	..	(47)	..	..	(84)	..	..	(73)	..	..	(83)	..	..	(79)	..	..	(80)

NOTE.—The above average rainfall figures for Brisbane, Sydney, and Melbourne differ slightly from the mean annual falls given in the Climatological Tables, which are for a less number of years. Annual totals from 1860 to 1900 inclusive will be found in Year Book No. 15, page 53.

9. **Remarkable Falls of Rain.**—The following are the more remarkable falls of rain in the various States and in the Northern Territory, which have occurred within a period of twenty-four hours. In New South Wales and Queensland falls of less than 15 inches in the twenty-four hours are not included. Reference, however, to them may be found in preceding Official Year Books (see No. 14, pp. 60-3):—

HEAVY RAINFALLS—NEW SOUTH WALES, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anthony ..	28 Mar., 1887	17.14	Madden's Creek ..	13 Jan., 1911	18.68
Bega ..	27 Feb., 1919	17.88	Morpeth ..	9 Mar., 1893	21.52
Broger's Creek ..	14 „ 1898	20.05	Mount Kembla ..	13 Jan., 1911	18.25
„ ..	13 Jan., 1911	20.83	Numbugga ..	27 Feb., 1919	17.87
Bulli Mountain ..	13 Dec., 1898	17.14	Tongarra Farm ..	14 „ 1898	15.12
Burragate ..	27 „ 1919	16.38	Towamba ..	5 Mar., 1893	20.00
Candelo ..	27 Feb., „	18.58	South Head (near		
Condong ..	27 Mar. 1887	18.66	Sydney) ..	29 Apr., 1841	20.12
Cordeaux River ..	14 Feb., 1898	22.58	„ ..	16 Oct., 1844	20.41
Kembla Heights ..	13 Jan., 1911	17.46			

HEAVY RAINFALLS—QUEENSLAND, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anglesey ..	26 Dec., 1909	18.20	Flying Fish Point	31 Jan., 1913	16.10
Atherton (Cairns) ..	31 Jan., 1913	16.69	Gladstone ..	4 Feb., 1911	18.83
Babinda (Cairns) ..	1 Feb., „	20.51	Glen Boughton ..	5 Apr., 1894	18.50
„ ..	24 Jan., 1916	22.30	Goldsborough		
„ ..	21 Apr., 1920	16.05	(Cairns) ..	31 Jan., 1913	19.92
Babinda ..	25 Mar., 1921	15.76	Goondi Mill (Innis-		
Bloomsbury ..	14 Feb., 1893	17.40	fail) ..	6 Apr., 1894	15.69
„ ..	10 Jan., 1901	16.62	„ ..	29 Dec., 1903	17.83
Brisbane ..	21 „ 1887	18.31	„ ..	10 Feb., 1911	17.68
Buderim Mountains	11 „ 1898	26.20	„ ..	6 Apr., 1912	15.55
Bundaberg ..	16 „ 1913	16.94	Goondi ..	30 Jan., 1913	24.10
Burnett Head			Goorganga ..	23 „ 1918	18.17
(Bundaberg) ..	16 „ 1913	15.22	Halifax ..	5 Feb., 1899	15.37
Cairns ..	11 Feb., 1911	15.17	„ ..	6 Jan., 1901	15.68
„ ..	2 Apr., „	20.16	Hambledon Mill ..	2 „ 1911	18.61
Carbrook ..	23 Jan., 1918	22.66	„ ..	1 Apr., „	19.62
„ ..	24 „ „	15.77	„ ..	30 Jan., 1913	17.32
Cardwell ..	18 Mar., 1904	18.24	Hampden ..	23 Apr., 1918	17.30
Carmilla ..	23 Jan., 1918	15.92	„ ..	24 „ „	17.19
Clare ..	26 „ 1896	15.30	Harvey Creek ..	8 Mar., 1899	17.72
Collaroy ..	23 „ 1918	18.06	„ ..	11 Jan., 1905	16.96
Crohamhurst ..			„ ..	3 „ 1911	27.75
(Blackall Range)	2 Feb., 1893	35.71	„ ..	2 Apr., „	16.46
„ ..	9 Jan., 1898	19.55	„ ..	31 Jan., 1913	24.72
„ ..	6 Mar., „	16.01	„ ..	25 Mar., 1921	15.80
Croydon ..	29 Jan., 1908	15.00	Haughton Valley..	26 Jan., 1896	18.10
Dungeness ..	16 Mar., 1893	22.17	Holmwood (Wood-		
Dunira ..	9 Jan., 1898	18.45	ford) ..	2 Feb., 1893	16.19
„ ..	6 Mar., „	15.95	Howard ..	15 Jan., 1905	19.55
Fairymead Planta-			Huntley ..	27 Dec., 1916	18.94
tion (Bundaberg)	16 Jan., 1913	15.32	Innisfail (formerly		
Flying Fish Point ..	7 Apr., 1912	16.06	Geraldton) ..	11 Feb., 1889	17.13

HEAVY RAINFALLS—QUEENSLAND—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Innisfail (formerly Geraldton) ..	6 Apr., 1894	16.02	Mourilyan ..	7 Apr., 1912	18.97
" ..	24 Jan., 1900	15.22	" ..	31 Jan., 1913	15.05
" ..	29 Dec., 1903	21.22	Mundoolun ..	21 " 1887	17.95
" ..	2 Apr., 1911	15.00	Nambour ..	9 " 1898	21.00
" ..	7 " 1912	20.50	" ..	27 Dec., 1909	16.80
" ..	31 Jan., 1913	20.91	Netherdale ..	22 Jan., 1918	19.50
Kamerunga (Cairns) ..	2 Apr., 1911	21.00	Oxenford ..	14 Mar., 1908	15.65
" ..	31 Jan., 1913	16.00	Palmwoods ..	10 Jan., 1898	15.85
Koumala ..	23 " 1918	22.31	" ..	25 Dec., 1909	17.75
" ..	24 " "	20.65	Pialba (Marybor'gh)	16 Jan., 1913	17.22
Kuranda (Cairns) ..	11 Feb., 1911	16.30	Plane Creek ..		
" ..	17 Mar., "	15.10	(Mackay) ..	26 Feb., "	27.73
" ..	31 " "	18.60	Port Douglas ..	10 Mar., 1904	16.34
" ..	1 Apr., "	24.30	" ..	17 " 1911	16.10
" ..	2 " "	28.80	" ..	1 Apr., "	31.53
" ..	31 Jan., 1913	16.34	Proserpine ..	23 Jan., 1918	18.17
Landsborough ..	2 Feb., 1893	15.15	Ravenswood ..	24 Mar., 1890	17.00
Low Island ..	10 Mar., 1904	15.07	Redcliffe ..	16 Feb., 1893	17.35
" ..	1 Apr., 1911	15.30	Rosedale ..	16 Jan., 1913	18.90
Lyndon (via Brixton) ..	3 " 1917	17.00*	Sarina ..	23 " 1918	22.60
Mackay ..	21 Jan., 1918	24.70†	St. Lawrence ..	30 " 1896	15.00
" ..	22 " "	17.25‡	The Hollow (Mac-		
Sugar Experimental			kay) ..	23 Feb., 1888	15.12
Farm, Mackay ..	21 " "	16.80	Thornborough ..	20 Apr., 1903	18.07
" ..	22 " "	17.20	Townsville ..	24 Jan., 1892	19.20
Macnade Mill ..	5 Feb., 1899	15.20	" ..	28 Dec., 1903	15.00
" ..	6 Jan., 1901	23.33	Victoria Mill ..	6 Jan., 1901	16.67
" ..	4 Mar., 1915	22.00	Woodlands (Yepp'n)	31 " 1893	23.07
Mapleton ..	26 Dec., 1909	15.72	Wootha ..	10 Feb., 1915	15.93
Mirani ..	12 Jan., 1901	16.59	Yandina ..	1 " 1893	20.08
Miriam Vale (B'berg) ..	17 " 1913	15.80	" ..	9 Jan., 1898	19.25
Mooloolah ..	13 Mar., 1892	21.53	" ..	28 Dec., 1909	15.80
" ..	2 Feb., 1893	19.11	Yarrabah ..	2 Apr., 1911	30.65
Mount Cuthbert ..	8 Jan., 1911	18.00	" ..	24 Jan., 1916	27.20
Mount Molloy ..	31 Mar., "	20.00	" ..	25 " "	18.60
" ..	1 Apr., "	20.00	Yeppoon ..	31 " 1893	20.05
" ..	2 " "	20.00	" ..	8 " 1898	18.05
Mourilyan ..	11 Feb., "	17.40	" ..	8 Oct., 1914	21.70

HEAVY RAINFALLS—WESTERN AUSTRALIA, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Alice Downs ..	15 Mar., 1922	10.58	Derby ..	7 Jan., 1917	16.47
Balla Balla ..	21 " 1899	14.40	Exmouth Gulf ..	2 Feb., 1918	12.50
Bamboo Creek ..	22 " "	10.10	Fortescue ..	3 May, 1890	23.36
Boodarie ..	21 " "	14.53	Frazier Downs ..	3 Mar., 1916	11.25
" ..	3 Jan., 1896	10.03	Kerdiadary ..	7 Feb., 1901	12.00
Broome ..	6 Jan., 1917	14.00	Meda ..	2 Mar., 1916	10.55
Carlton ..	11 " 1903	10.64	Millstream ..	5 " 1900	10.00
Cossack ..	3 Apr., 1898	12.82	Obagama ..	28 Feb., 1910	12.00
" ..	16 " 1900	13.23	" ..	24 Dec., 1920	13.02
Croydon ..	3 Mar., 1903	12.00	Pilbara ..	2 Apr., 1898	14.04
Derby ..	29 Dec., 1898	13.09	Point Cloates ..	20 Jan., 1909	10.87

* Mr. Jas. Laidlaw, of Lyndon, states that this fell in 4 hours.

† 37½ hours.

‡ 22½ hours.

HEAVY RAINFALLS, WESTERN AUSTRALIA—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Point Torment ..	17 Dec., 1906	11.86	Whim Creek ..	3 Apr., 1898	29.41
Port George IV. ..	17 Jan., 1915	11.24	" " ..	21 Mar., 1899	18.17
Roebourne ..	3 Apr., 1898	11.44	" " ..	6 " 1900	10.03
" " ..	6 Mar., 1900	10.32	" " ..	3 " 1903	10.44
Roebuck Plains ..	5 Jan., 1917	14.01	Woodstock ..	21 " 1912	13.00
" " ..	6 " "	22.36	Wyndham ..	27 Jan., 1890	11.60
Springvale ..	14 Mar., 1922	12.25	" " ..	4 Mar., 1919	12.50
Tambray ..	6 " 1900	11.00	Yardie Creek ..	3 Feb., 1918	10.00
" " ..	3 " 1903	10.47	Yeeda ..	2 Mar., 1916	10.70
Thangoc ..	17-19 Feb. '96	24.18	" " ..	6 Jan., 1917	10.20
" " ..	28 Dec., 1898	11.15	" " ..	7 " "	11.75

HEAVY RAINFALLS—NORTHERN TERRITORY, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Bonrook ..	24 Dec., 1915	10.60	Cosmopolitan Gold		
Borroloola ..	14 Mar., 1899	14.00	Mine ..	24 Dec., 1915	10.60
Brock's Creek ..	4 Jan., 1914	10.68	Darwin ..	7 " "	11.67
" " ..	24 Dec., 1915	14.33	Lake Nash ..	21 Mar., 1901	10.25
Burrundie ..	4 Jan., 1914	11.61	Pine Creek ..	8 Jan., 1897	10.35

HEAVY RAINFALLS—SOUTH AUSTRALIA, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Wilmington ..	28 Feb., 1921	3.97	Wilmington ..	1 Mar., 1921	7.12

HEAVY RAINFALLS—VICTORIA, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balook ..	26 Sept., 1917	5.32	Mt. Buffalo ..	6 June, 1917	8.53
" " ..	27 " "	7.23	" " ..	7 " "	6.56
" " ..	28 " "	2.08			

HEAVY RAINFALLS—TASMANIA, UP TO 1922, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Gould's Country ..	8-10 Mar., '11	15.33	Mathinna ..	8-10 Mar., '11	15.79
Lottah ..	8-10 " "	18.10	The Springs ..	30-31 Jan., '16	10.75

10. Snowfall.—Light snow has been known to fall occasionally so far north as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons, it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria so far north as Toowoomba in Queensland. During the winter, for several months, snow covers the ground to a great extent on the Australian Alps, where also the temperature falls below zero Fahrenheit during the night. In the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with the most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed, and protrude into very low latitudes, sometimes even to the tropics.

11. Hail.—Throughout Australia hail falls most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. A summer rarely passes without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanized iron bear evidence of the weight and penetrating power of the stones.

The hailstorms occur most frequently when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. Barometric Pressures.—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January, the mean pressure ranges from 29.70 inches in the northern and central areas to 29.95 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.12 inches at Alice Springs. Barometer readings corrected to mean sea level and standard gravity have, under anticyclonic conditions in the interior of the continent, ranged as high as 30.77 inches (at Kalgoorlie on the 28th July, 1901) and have fallen as low as 27.55 inches. This lowest record was registered at Mackay during a tropical hurricane on the 21st January, 1918. An almost equally abnormal reading of 27.88 inches was recorded at Innisfail during a similar storm on the 10th March, 1918. The mean annual fluctuations of barometric pressure for the capitals of Australia are shown on the graph herein.

13. Wind.—Notes on the distinctive wind currents in Australia were given in preceding Year Books (see No. 6, page 83), but, owing to limitations of space, have not been included herein.

14. Cyclones and Storms.*—The "elements" in Australia are ordinarily peaceful, and while destructive cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months, the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, or in that part of them which has a north-westerly to a south-westerly circulation.

The north-east coast of Queensland is occasionally visited by hurricanes from the north-east tropics. During the first four months of the year, these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurving in their path to the east of New Caledonia.

Very severe cyclones, locally known as "willy willies," are peculiar to the north-west coast of Western Australia from the months of November to April inclusive. They apparently originate in the ocean in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy

* See also special article on "Australian Hurricanes and Related Storms" immediately following this article in Official Year Book No. 16.

near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, and cause great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coastline, or cross the continent to the Great Australian Bight. When they take the latter course, their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded in 24 hours at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the northern interior of Western Australia from similar storms.

Some further notes on severe cyclones and on "southerly bursters," a characteristic feature of the eastern part of Australia, will be found in previous issues of the Official Year Book (see No. 6, pp. 84, 85, 86).

15. Influences affecting Australian Climate.—(i) *General.* Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes have, however, taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shows a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great increase of residential and manufacturing buildings within the city and in the surrounding suburbs. Again, low-lying lands on the north coast of New South Wales, which originally were seldom subject to frosts, have, with the denudation of the surrounding hills from forests, experienced annual visitations, the probable explanation being that through the absence of trees the cold air of the high lands now flows unchecked and untempered down the sides of the hills to the valleys and lower lands.

(ii) *Influence of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalizing one; thus, especially in equatorial regions, and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of shade temperatures by altering the extent of radiating surface by evaporation, and by checking the movement of air, and while decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain and the washing away of surface soil, and when a region is protected by trees, a steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall, the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the case of the inland rivers; the River Murray, for example, which has never been known to run dry, deriving its steadiness of flow mainly through the causes indicated.

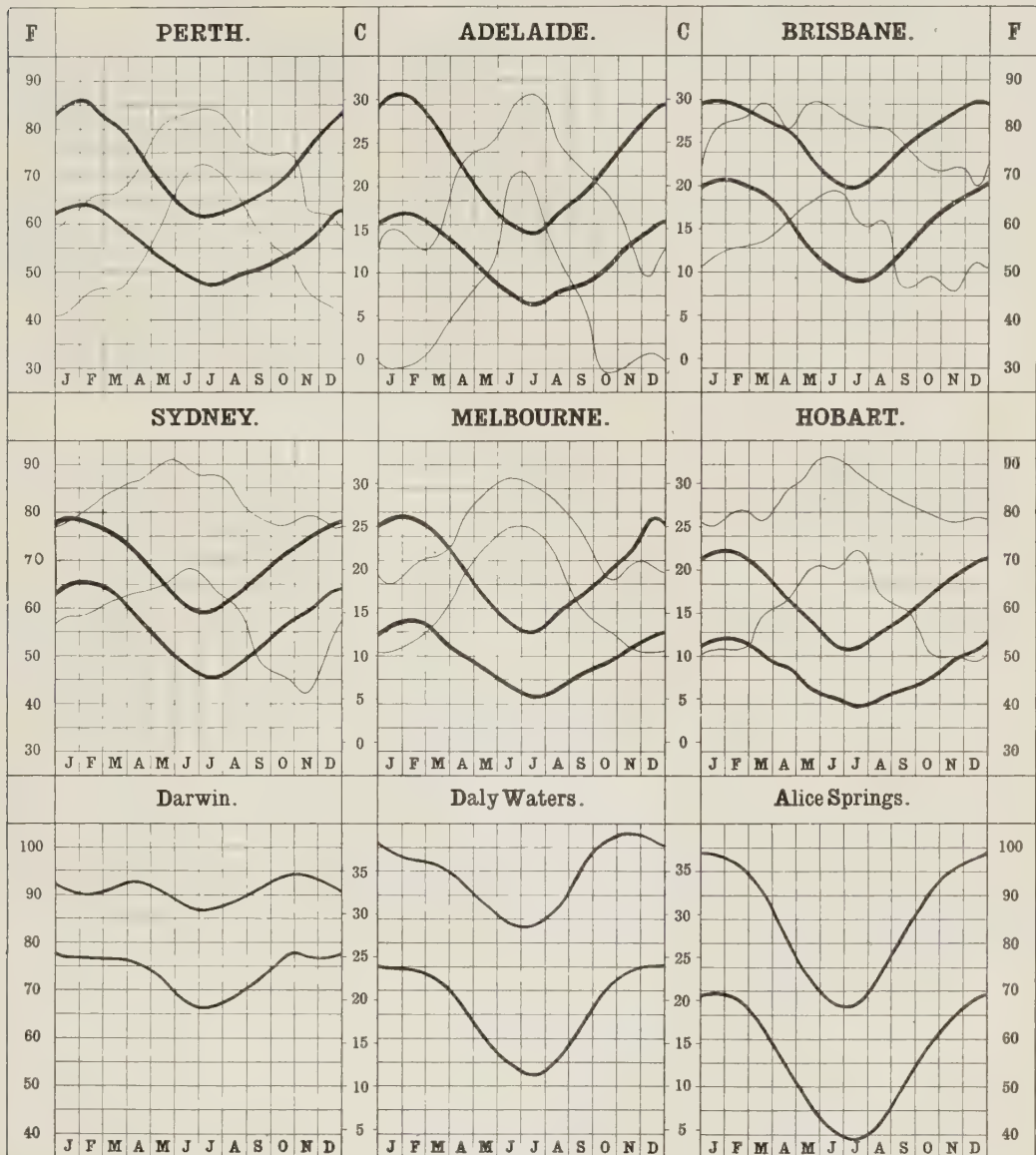
(iii) *Direct Influence of Forests on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others take the opposite view.

Sufficient evidence exists, however, to prove that, even if the rainfall has not increased, the beneficial climatic effect of forest lands more than warrants their protection and extension. Rapid rate of evaporation, induced by both hot and cold winds, injures crops and makes life uncomfortable on the plains, and, while it may be doubted that the forest aids in increasing precipitation, it must be admitted that it does check winds and the rapid evaporation due to them. Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of the treeless interior of Australia. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.

In previous issues some notes on observations made in other countries were added (see Official Year Book No. 6, pp. 86 and 95).

16. Rainfall and Temperature, Various Cities.—The following table shows rainfall and temperature for various important cities throughout the world, for the site of the Federal capital, and for the capitals of the Australian States.

ANNUAL FLUCTUATIONS OF NORMAL MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY.



EXPLANATION.—The heavy lines denote “temperature” and the thin lines “humidity,” and are plotted from the data given in the Climatological Tables herein. The temperatures are shown in degrees Fahrenheit, the inner columns giving the corresponding values in degrees Centigrade. Humidities have not been obtained for Darwin, Daly Waters, and Alice Springs.

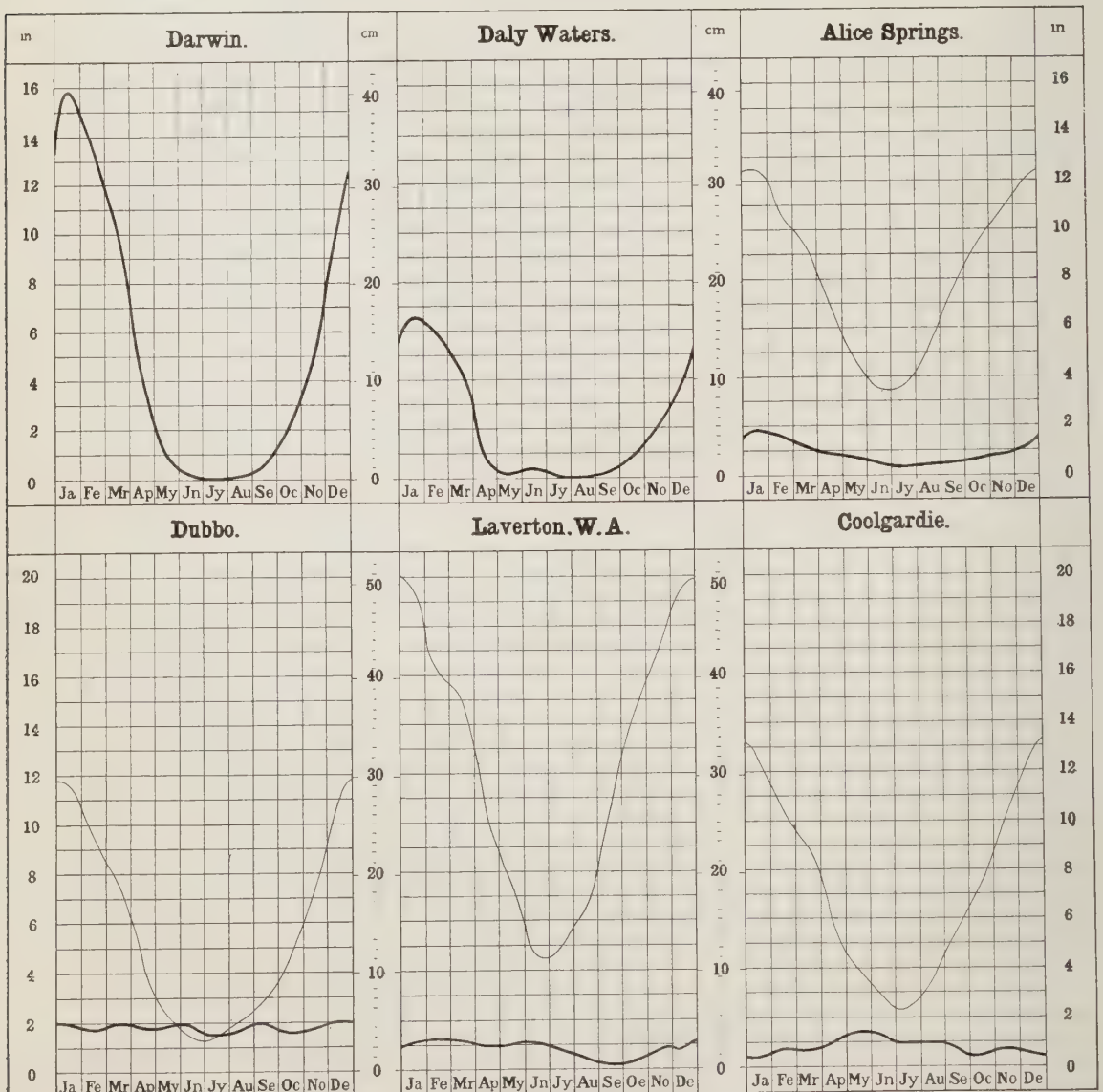
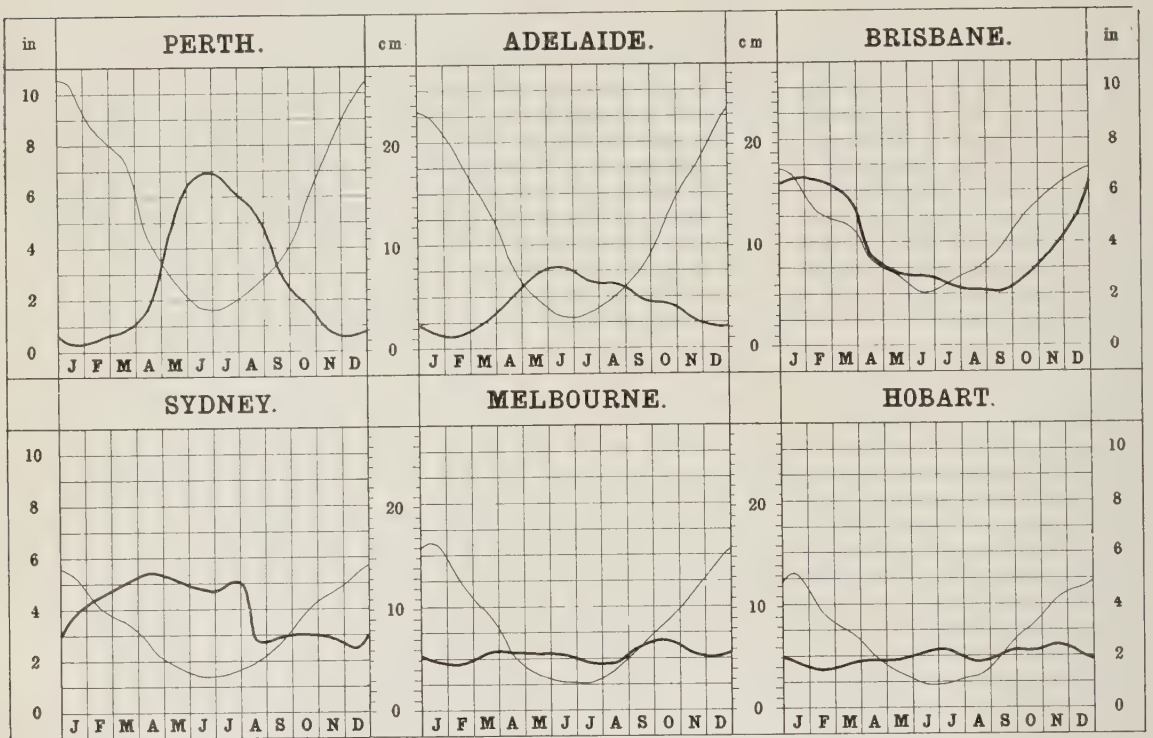
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation (absolute saturation = 100).

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also show the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves show the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

The curves denote mean monthly values. Taking for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years in the middle of January would give respectively about 85° Fahr. and 63° Fahr. Thus the mean range of temperature on that date is the difference, viz., 22°. Similarly, observations about the middle of June would give respectively 64° Fahr. and 49° Fahr., or a range of 15°.

Similarly, the greatest mean humidity, say for March, is about 66% and the least mean humidity for that month 46%; in other words, at Perth the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 66% and 46%.

MEAN MONTHLY RAINFALL AND EVAPORATION.



EXPLANATION.—On the preceding graphs thick lines denote rainfall, and thin lines evaporation, and show the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables herein are shown in inches (see the outer columns), and the corresponding metric scale (centimetres) is shown in the two inner columns. The evaporation is not given for Darwin and Daly Waters.

At Perth, Adelaide, Brisbane, Melbourne, Hobart, Alice Springs, and Coolgardie the results have been obtained from jacketed tanks sunk in the ground. At Sydney and Dubbo sunken tanks without water jackets are used, whilst at Laverton (W.A.) the records are taken from a small portable jacketed evaporation dish of 8 inches in diameter.

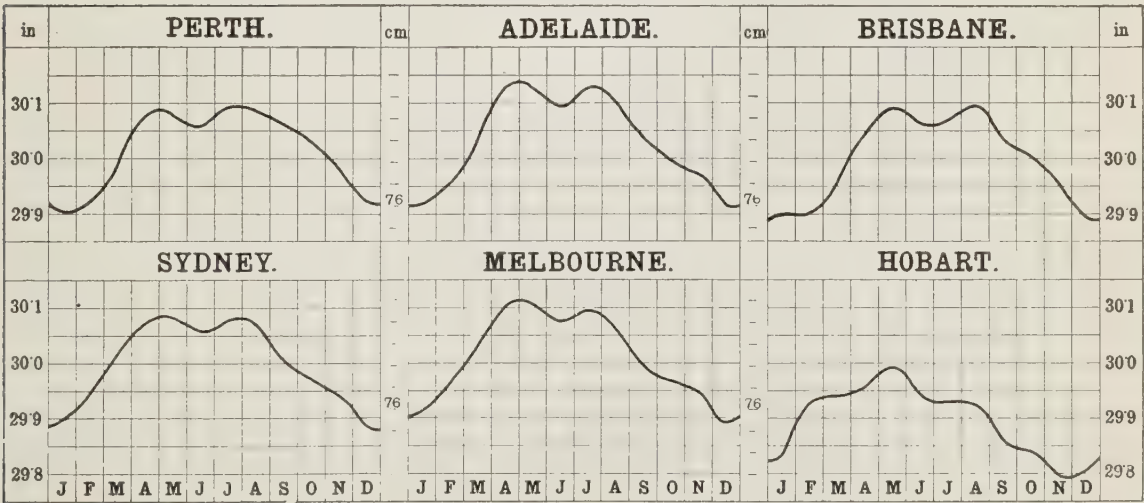
The distance for any date from the zero line to the curve represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, in the middle of January the rain falls on the average at the rate of about three-fourths of an inch per month, or, say, at the rate of about 9 inches per year. In the middle of June it falls at the rate of a little over 3 inches per month, or, say, at the rate of about 37 inches per year. At Dubbo the evaporation is at the rate of nearly 11½ inches per month about the middle of January, and only about 1½ inches at the middle of June.

The mean annual rainfall and evaporation at the places indicated are given in the appended table.

MEAN ANNUAL RAINFALL AND EVAPORATION.

Place.	Rainfall.	Evapora- tion.	Place.	Rainfall.	Evapora- tion.
	In.	In.		In.	In.
Perth ..	33.86	65.88	Darwin ..	61.97	—
Adelaide ..	21.08	54.56	Daly Waters ..	26.58	—
Brisbane ..	45.51	51.93	Alice Springs ..	11.24	93.99
Sydney ..	47.91	38.26	Dubbo ..	21.97	66.37
Melbourne ..	25.65	38.87	Laverton, W.A.	9.88	141.42
Hobart ..	23.65	32.37	Coolgardie ..	10.15	87.69

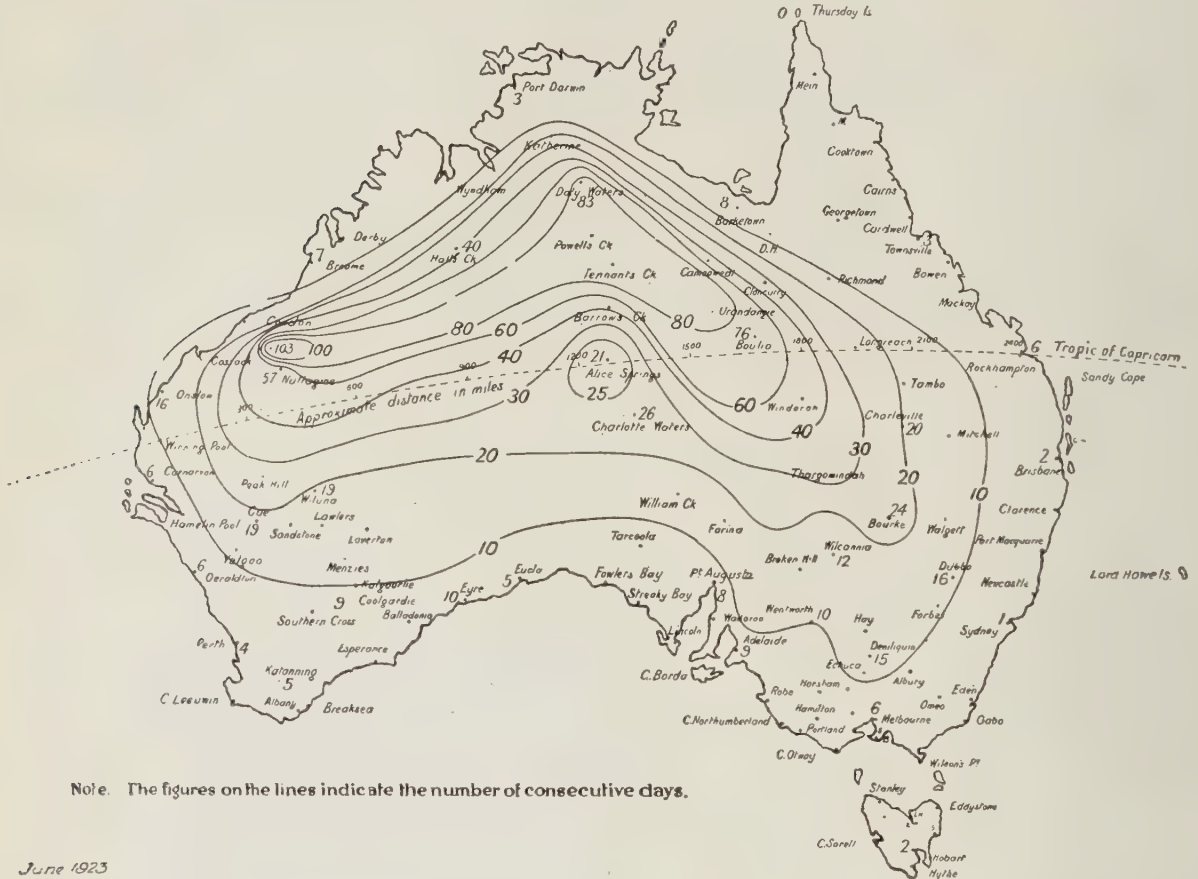
MEAN BAROMETRIC PRESSURE—CAPITAL CITIES.



EXPLANATION.—The lines representing the yearly fluctuations of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables herein. The pressures are shown in inches on about 2½ times the natural scale, and the corresponding pressures in centimetres are also shown in the two inner columns, in which each division represents one millimetre.

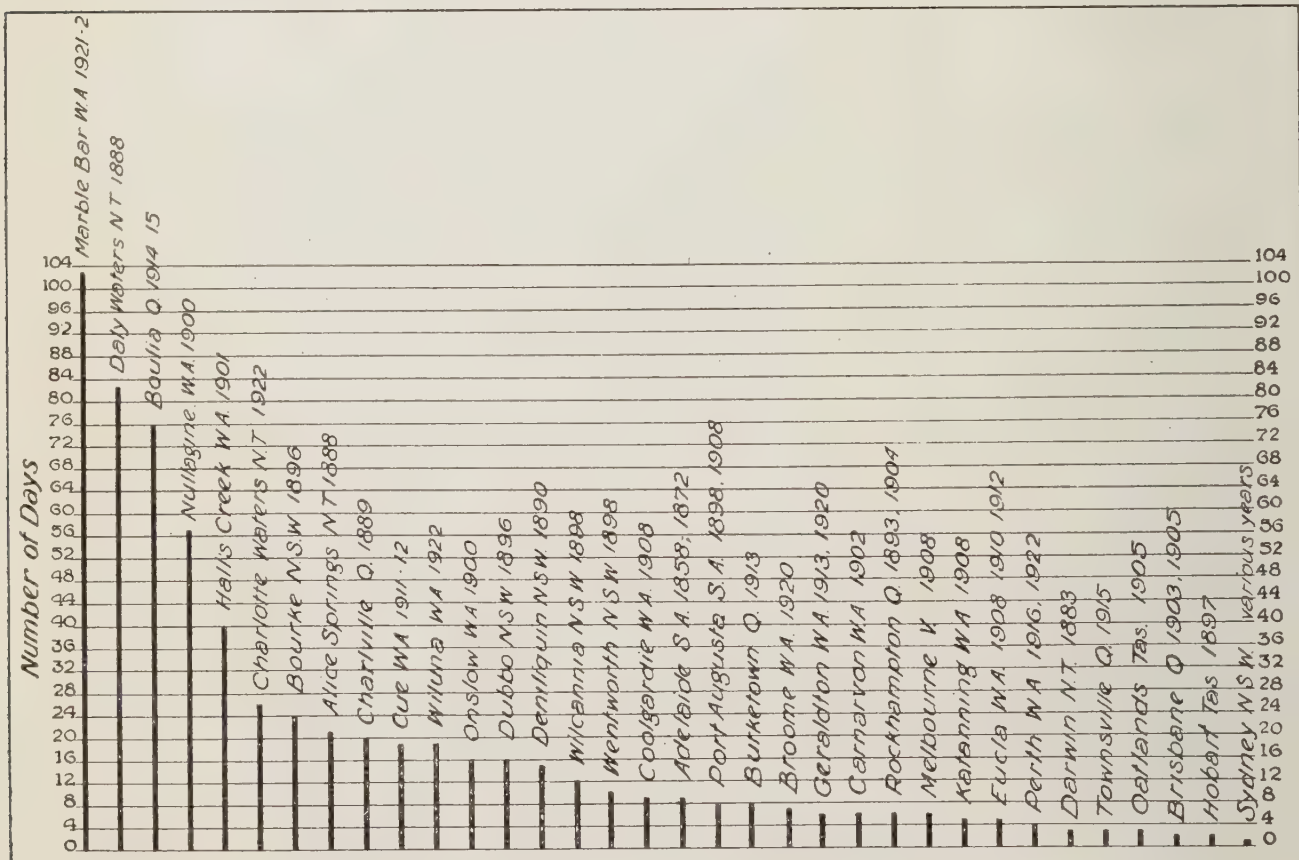
INTERPRETATION.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure in the middle of January is about 29.87 inches, and there are maxima in the middle of May and August of about 30.09 inches.

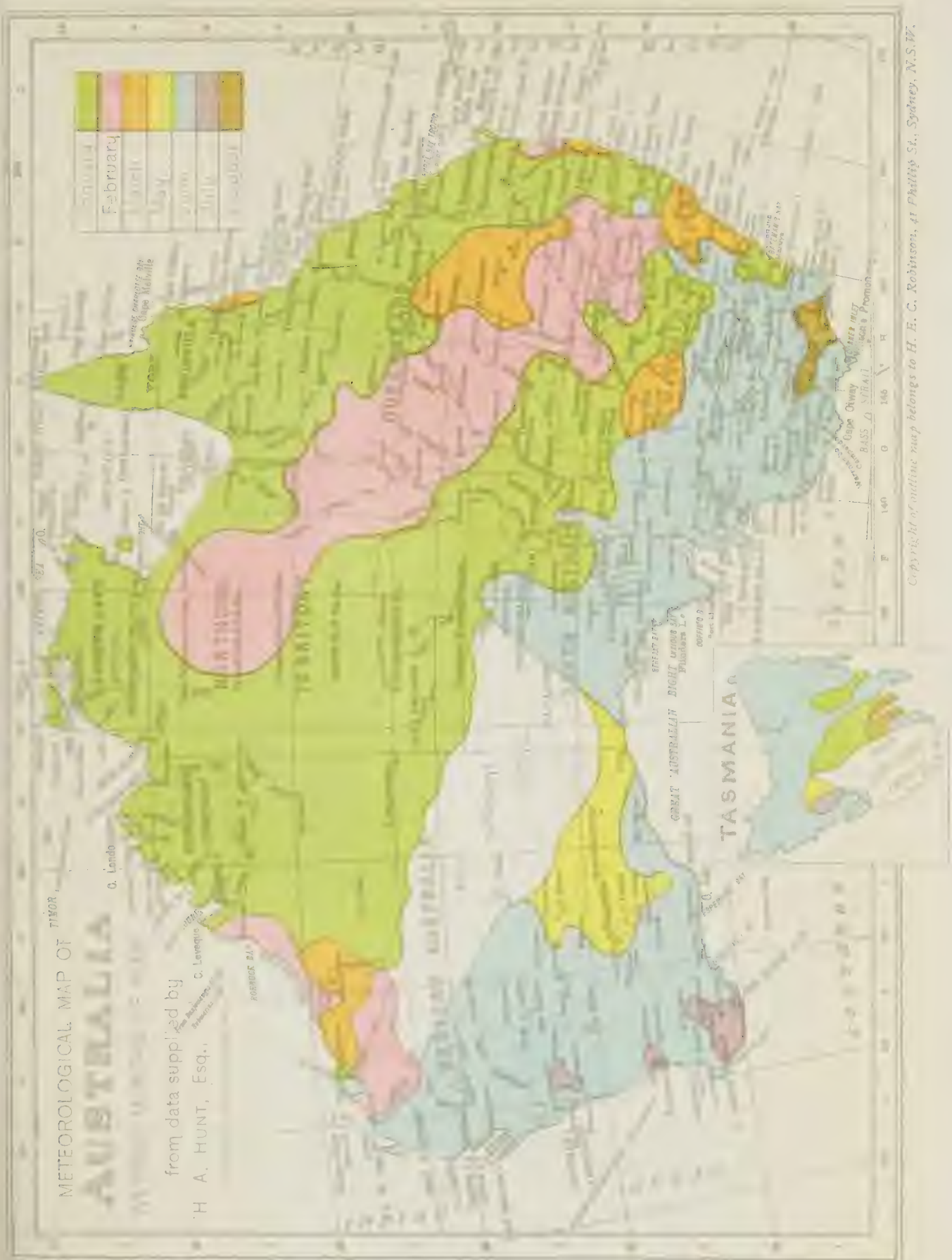
Area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 100° Fah.



June 1923

Greatest number of consecutive days on which the Shade Temperature was over 100° Fah. at the places indicated.





METEOROLOGICAL SUB-DIVISION

WEST AUSTRALIA.		NEW SOUTH WALES.		TASMANIA.	
1. East Kimberley.	11. Upper North.	27. Western.	3. Central Coast.	48. Northern.	49. W. Coast Mt. Region
2. West Kimberley.	12. North-East.	28. North-West Plain.	33a. Metropolitan.	49. W. Coast Mt. Region	Central Plateau.
3. North-West.	13. Lower North.	29. North West Slope.	34. Cent. Westn. Slope.	51. Midland.	52. East Coast.
4. Gascoyne.	14. Central.	30. Northern Tableland	35. Cent. Westn. Plain.	53. Derwent.	54. South-Eastern.
5. South-West.	15. Murray Valley.	31. North Coast.	36. Riverina.		
6. Eastern.	16. South-East.	32. Hunter & Manning.	37. South-West Slope.		
			38. Southern Tableland		
			39. South Coast.		
SOUTH AUSTRALIA.	QUEENSLAND.				
7. Northern Territory.	17. Peninsular.				
8. Far North and N.W.	18. Far West.				
9. West.	19. Central.				
	20. North-East Coast.				

The above are the meteorological sub-divisions adopted by H. A. HUNT Esq., C.wealth. Meteorologist

— Map of —
AUSTRALIA
— AND —
TASMANIA

Showing the mean monthly distribution of Rainfall
in percentages of the average annual

Published by authority, under the direction of
H A Hunt Commonwealth Meteorologist



The vertical side of each of the small squares of the graphs equals 2 per cent. For convenience, Tasmania has been placed in the centre of the map, it of course comes within the zone of winter rains. The large figures on the graphs indicate the number of Years record at the station indicated and the small sloping figures denote the average annual rainfall for that period.



RAINFALL AND TEMPERATURE—VARIOUS CITIES.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	(a) Mean Summer.	(b) Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam ..	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland ..	125	43.31	63.72	26.32	66.1	52.5	91.0	31.9	67.2	51.8
Athens ..	351	15.48	33.33	4.56	79.2	49.1	109.4	19.6	81.0	47.4
Bergen ..	72	77.09	111.58	44.49	56.8	34.2	88.5	4.8	57.9	33.6
Berlin ..	161	22.72	30.04	14.25	64.8	33.0	98.6	-13.0	66.0	31.8
Berne ..	1,877	36.30	58.23	24.69	62.2	30.1	91.4	-3.6	64.4	28.0
Bombay ..	37	71.15	114.89	33.41	83.5	75.1	100.0	55.9	84.8	74.2
Breslau ..	482	22.52	32.56	16.50	64.1	33.5	100.0	-23.4	65.5	29.3
Brussels ..	328	28.35	41.18	17.73	62.6	36.0	95.5	-4.4	63.7	34.5
Budapest ..	500	25.20	35.28	16.79	68.6	30.2	98.6	-5.1	70.4	28.2
Buenos Ayres ..	82	38.78	79.72	20.04	72.7	50.9	103.1	22.3	73.8	50.0
Calcutta ..	21	61.82	98.48	38.43	85.6	68.0	108.2	44.2	86.0	66.4
Capetown ..	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas ..	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago ..	823	33.28	45.86	24.52	70.0	26.1	103.0	-23.0	72.4	23.7
Christchurch ..	25	25.45	35.30	13.54	61.1	43.4	95.7	21.3	61.6	42.4
Christiania ..	75	23.23	32.21	16.26	61.0	24.5	95.0	-21.1	62.6	23.9
Colombo ..	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople ..	245	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42.0
Copenhagen ..	10	20.79	25.83	15.47	60.4	33.3	85.5	-3.3	61.9	32.4
Dresden ..	115	26.80	34.49	17.72	62.9	32.4	93.4	-15.3	64.4	31.6
Dublin ..	47	27.66	35.56	16.60	59.4	42.0	87.2	13.3	60.5	41.7
Dunedin ..	300	37.06	53.90	22.15	57.3	43.1	94.0	23.0	57.9	42.0
Durban ..	260	40.79	71.27	27.24	75.6	64.4	110.6	41.1	76.7	63.8
Edinburgh ..	441	25.21	32.05	16.44	55.8	38.8	87.7	5.0	57.2	38.3
Geneva ..	1,328	33.48	46.89	21.14	64.4	33.7	..	..	66.2	32.2
Genoa ..	157	51.29	108.22	28.21	73.8	46.8	94.5	16.7	75.4	45.5
Glasgow ..	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	58.0	38.4
Greenwich ..	149	23.50	35.54	16.38	62.0	39.5	100.0	6.9	63.5	38.5
Hong Kong ..	109	84.28	119.72	45.84	86.2	64.8	97.0	32.0	86.7	62.9
Johannesburg ..	5,750	31.63	50.00	21.66	65.4	54.4	94.0	23.3	68.2	48.9
Leipzig ..	384	24.69	31.37	17.10	63.1	31.5	97.3	-14.8	64.8	30.6
Lisbon ..	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	70.2	49.3
London (Kew) ..	18	23.80	38.20	16.64	61.2	39.8	94.0	9.4	62.7	38.9
Madras ..	22	49.85	88.41	18.45	89.0	76.8	113.0	57.5	89.9	76.1
Madrid ..	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ..	246	22.24	43.03	12.28	70.5	45.3	100.4	11.7	72.3	44.6
Moscow ..	526	18.94	29.28	12.07	63.4	14.7	99.5	-44.5	66.1	11.9
Naples ..	489	34.00	56.58	21.75	73.6	48.0	99.1	23.9	75.4	46.8
New York ..	314	44.63	58.68	33.17	71.4	31.8	102.0	-13.0	73.5	30.2
Ottawa ..	236	33.40	53.79	25.63	67.2	14.1	98.0	-33.0	69.7	12.0
Paris ..	164	22.64	29.57	16.46	63.5	37.2	101.1	-14.1	64.9	36.1
Pekin ..	143	24.40	36.00	18.00	77.7	26.6	114.0	-5.0	79.2	23.6
Petrograd ..	16	21.30	29.52	13.75	61.1	17.4	97.0	-38.2	63.7	15.2
Quebec ..	296	40.50	53.79	32.12	63.5	12.4	96.0	-34.0	66.3	10.1
Rome ..	166	32.57	57.89	12.72	74.3	46.0	104.2	17.2	76.1	44.6
San Francisco ..	155	22.27	38.82	9.00	58.8	50.5	101.0	29.0	59.3	49.5
Shanghai ..	21	45.00	62.52	27.92	78.0	41.1	102.9	10.2	80.4	37.8
Singapore ..	8	91.99	158.68	32.71	81.2	78.6	94.2	63.4	81.5	78.3
Stockholm ..	144	19.09	28.27	11.81	59.5	27.3	96.8	-25.6	61.9	26.4
Tokio ..	65	61.45	86.37	45.72	74.8	39.2	97.9	17.2	77.7	37.5
Trieste ..	85	42.94	63.14	26.57	73.9	41.3	99.5	14.0	76.3	39.9
Vienna ..	663	24.50	33.90	16.50	65.7	30.4	97.7	-8.0	67.1	28.0
Vladivostok ..	55	19.54	33.60	9.39	63.9	11.0	95.7	-21.8	69.4	6.1
Washington ..	112	43.50	61.33	30.85	74.7	34.5	106.0	-15.0	76.8	32.9
Wellington (N.Z.) ..	110	49.70	67.68	30.02	61.7	48.4	88.0	30.0	62.4	47.5
Zürich ..	1,542	45.15	78.27	29.02	63.3	31.3	94.1	-0.8	65.1	29.5

FEDERAL CAPITAL SITE.

Canberra (Dist.) Queanbeyan	{ 2,000 to 2,900 }	22.51	41.29	10.45	(a) 68.4	(b) 44.2	102.6	18.0	68.8	43.4
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STATE CAPITALS.

Perth ..	197	33.86	46.73	20.21	(a) 73.1	(b) 56.0	108.4	34.2	74.2	55.2
Adelaide ..	140	21.08	30.87	11.39	73.1	53.1	116.3	32.0	74.2	51.7
Brisbane ..	137	45.51	88.26	16.17	76.6	59.7	108.9	36.1	77.1	58.4
Sydney ..	133	47.91	82.76	21.49	71.0	54.1	108.5	35.9	71.6	52.6
Melbourne ..	115	25.65	44.25	15.61	66.6	50.0	111.2	27.0	67.6	48.6
Hobart ..	177	23.65	43.39	13.43	61.6	46.8	105.2	27.0	62.4	45.5

(a) Mean of the three hottest months. (b) Mean of the three coldest months.

17. **Climatological Tables.**—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals up to and including the year 1922. These are given in the following tables:—

CLIMATOLOGICAL DATA—PERTH, WESTERN AUSTRALIA.

LAT. 31° 57' S., LONG. 115° 50' E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing-Direction.				
No. of yrs. over which observation extends	38	25	25	25	25	24	25	26	26
January ..	29.907	797 27/98	0.68	11,225	S S E	10.42	1.8	2.7	13.9
February ..	29.922	650 6/03	0.63	9,868	S S E	8.58	1.6	2.9	11.6
March ..	29.987	651 6/13	0.53	9,957	S S E	7.64	1.4	3.2	12.0
April ..	30.075	955 25/00	0.40	8,361	S E	4.74	1.3	4.1	8.0
May ..	30.077	768 5/12	0.35	7,990	E N E	2.72	2.2	5.2	5.2
June ..	30.061	861 27/10	0.36	7,895	N	1.74	2.2	5.8	3.2
July ..	30.090	949 11/99	0.39	8,461	N	1.72	2.4	5.4	4.9
August ..	30.084	966 15/03	0.42	8,809	W	2.36	1.6	5.3	4.7
September ..	30.060	864 11/05	0.47	8,973	S W	3.30	1.3	4.9	5.7
October ..	30.032	809 6/16	0.53	9,907	S S W	5.25	1.1	4.8	6.0
November ..	29.988	777 18/97	0.60	10,214	S	7.63	1.4	3.8	7.9
December ..	29.926	776 6/22	0.65	10,974	S	9.78	1.7	3.0	12.1
Year { Totals ..	—	—	—	—	—	65.88	20.0	—	95.2
Year { Averages ..	30.017	—	0.50	9,386	S	—	—	4.3	—
Year { Extremes ..	—	966 15/8/03	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	26	26	26	26	26	26	24	24	25
January ..	84.5	63.3	73.9	108.4 28/21	49.9 1/21	58.5	177.3 22/14	40.4 1/21	321.0
February ..	84.9	63.5	74.2	107.3 12/15	47.7 1/02	59.6	169.0 4/99	39.8 1/13	272.5
March ..	81.4	60.9	71.2	106.4 14/22	45.8 8/03	60.6	167.0 19/18	36.7 8/03	270.6
April ..	75.9	57.0	66.4	99.7 9/10	39.3 20/14	60.4	157.0 8/16	31.0 20/14	219.8
May ..	68.6	52.4	60.5	90.4 2/07	34.3 11/14	56.1	141.0 2/21	25.3 11/14	178.7
June ..	63.9	49.5	56.7	81.7 2/14	35.0 30/20	46.7	135.5 9/14	26.5 30/20	144.4
July ..	62.6	47.7	55.2	76.4 21/21	34.2 7/16	42.2	133.2 13/15	25.1 30/20	167.4
August ..	63.8	48.1	56.0	81.0 12/14	35.3 31/08	45.7	145.1 29/21	27.9 10/11	186.0
September ..	66.1	50.2	58.2	90.9 30/18	38.9 17/13	52.0	153.6 29/16	29.2 21/16	203.8
October ..	69.4	52.7	61.0	95.3 30/22	40.9 4/17	54.4	154.0 29/14	30.5 4/17	237.7
November ..	75.4	56.6	66.0	104.6 24/13	42.0 1/04	62.6	166.6 23/15	35.5 (a)	287.8
December ..	80.6	60.5	70.6	107.9 20/04	48.0 2/10	59.9	168.7 25/15	39.0 12/20	324.1
Year { Averages ..	73.1	55.2	64.2	—	—	—	—	—	2813.86
Year { Extremes ..	—	—	—	108.4 28/1/21	34.2 7/7/16	74.2	177.3 22/1/14	25.1 30/7/20	—

(a) 6/10 and 14/12.

(b) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).				Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Year.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	26	26	26	47	47	47	47	47	26
January ..	52	61	42	0.32	3	2.17 1879	nil (a)	1.74 28/79	2.5
February ..	54	65	46	0.47	2	2.98 1915	nil (a)	1.63 26/15	3.0
March ..	57	66	46	0.74	4	4.50 1896	nil (a)	1.53 17/76	5.7
April ..	64	72	51	1.60	7	4.97 1882	nil 1920	2.62 30/04	9.0
May ..	72	81	61	4.91	14	12.13 1879	0.98 1903	2.80 20/79	12.4
June ..	78	83	72	6.80	17	12.11 1890	2.16 1877	3.90 10/20	12.0
July ..	78	84	72	6.54	17	10.90 1902	2.42 1876	3.00 4/91	13.3
August ..	74	79	67	5.68	18	10.33 1882	0.46 1902	2.79 7/03	11.2
September ..	68	75	58	3.33	15	7.72 1903	0.62 1914	1.73 23/09	9.3
October ..	62	75	54	2.10	12	7.87 1890	0.49 1892	1.38 15/10	5.3
November ..	55	63	46	0.78	6	2.78 1916	nil 1891	1.11 30/03	3.8
December ..	52	62	44	0.59	4	3.05 1888	nil 1886	1.72 1/88	2.9
Year { Totals ..	—	—	—	33.86	119	—	—	—	90.4
Year { Averages ..	62	—	—	—	—	—	—	—	—
Year { Extremes ..	—	84	42	—	—	12.13 5/79	nil (b)	3.90 10/6/20	—

(a) Various years.

(b) January, February, March, November, and December, various years.

CLIMATOLOGICAL DATA—ADELAIDE, SOUTH AUSTRALIA.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	66	45	45	45	45	53	51	55	41
January	29.916	758 19/99	0.34	7,898	S	8.98	2.3	3.4	8.3
February	29.953	691 22/96	0.29	6,758	S	7.35	2.0	3.4	7.1
March	30.038	628 9/12	0.24	6,707	S	5.82	2.2	3.9	7.0
April	30.120	773 10/96	0.22	6,133	S x W	3.42	1.6	5.0	4.0
May	30.125	760 9/80	0.21	6,187	N x E	2.01	1.7	5.3	1.9
June	30.095	750 12/78	0.25	6,590	N	1.24	2.1	6.1	1.6
July	30.127	674 25/82	0.25	6,756	N	1.29	1.6	5.8	1.8
August	30.098	773 31/97	0.28	7,172	N N W	1.87	2.2	5.6	2.5
September	30.040	720 2/87	0.31	7,312	W	2.86	2.4	5.2	3.2
October	30.000	768 28/98	0.34	7,886	S W x W	4.77	3.4	4.9	4.0
November	29.974	677 2/04	0.33	7,554	S S W	6.54	3.6	4.6	5.1
December	29.918	675 12/91	0.34	7,924	S S W	8.41	2.4	3.8	7.3
Year { Totals	—	—	—	—	—	54.56	27.5	—	53.8
Averages	30.034	—	0.28	7,073.1	S W x S	—	—	4.8	—
Extremes	—	773 (a)	—	—	—	—	—	—	—

(a) 10/4/96 and 31/8/97.

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	66	66	66	66	66	66	45	62	41
January	86.4	61.6	74.0	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	310.6
February	86.2	62.1	74.2	113.6 12/99	45.5 23/18	68.1	170.5 10/00	36.7 (c)	264.3
March	80.8	58.9	69.8	108.0 12/61	44.8 -/57	63.2	174.0 17/83	33.8 27/80	239.9
April	73.2	54.6	63.9	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.2 16/17	177.5
May	65.6	50.2	57.9	89.5 4/21	36.9 (a)	52.6	148.2 12/79	25.9 10/91	147.8
June	60.3	46.7	53.5	76.0 23/65	32.5 27/76	43.5	138.8 18/79	22.9 12/13	121.6
July	58.8	44.5	51.7	74.0 11/06	32.0 24/08	42.0	134.5 26/90	23.3 25/11	138.4
August	62.0	45.9	54.0	85.0 31/11	32.3 17/59	52.7	140.0 31/92	23.5 7/88	163.4
September	66.3	47.9	57.1	90.7 23/82	32.7 4/58	58.0	160.5 23/82	26.2 15/08	184.1
October	72.5	51.4	62.0	102.9 21/22	36.0 -/57	66.9	162.0 30/21	27.8 2/18	228.5
November	78.7	55.4	67.0	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	262.2
December	83.4	59.0	71.2	114.2 14/76	43.0 (b)	71.2	175.7 7/99	32.5 4/84	303.5
Year { Averages	72.8	53.2	63.0	—	—	—	—	—	2541.8d
Extremes	—	—	—	116.3 26/1/58	32.0 24/7/08	84.3	180.0 18/1/82	22.9 12/6/13	—

(a) 26/1895 and 24/1904.

(b) 16/1861 and 4/1906.

(c) 24/78 and 23/18.

(d) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).				Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean No. Days Dew.
No. of yrs. over which observation extends	55	55	55	84	84	84	84	84	51
January	38	59	30	0.73	4	4.00 1850	nil (a)	2.30 2/89	4.2
February	40	56	31	0.64	4	2.89 1919	nil (b)	2.24 14/13	5.7
March	47	58	36	1.05	6	4.60 1878	nil (c)	3.50 5/78	11.1
April	56	72	44	1.78	9	6.78 1853	0.06 1910	3.15 5/60	13.9
May	68	76	49	2.74	13	7.75 1875	0.20 1891	2.75 1/53	15.8
June	77	84	69	3.11	16	8.58 1916	0.42 1886	2.11 1/20	15.8
July	76	87	68	2.65	16	5.38 1865	0.37 1899	1.75 10/65	17.3
August	69	77	54	2.52	16	6.24 1852	0.35 1914	2.23 19/51	16.5
September	61	72	44	1.98	14	4.64 1840	0.45 1896	1.42 (d)	15.7
October	51	67	29	1.73	11	3.83 1870	0.17 1914	2.24 16/08	12.7
November	43	57	31	1.16	8	3.55 1851	0.04 1885	1.88 28/58	7.1
December	39	50	33	0.99	6	3.98 1861	nil 1904	2.42 23/13	4.8
Year { Totals	—	—	—	21.08	123	—	—	—	—
Averages	53	—	—	—	—	—	—	—	—
Extremes	—	87	29	—	—	8.58 6/16	nil (e)	3.50 5/3/78	—

(a) 1848, &c.

(b) 1848, &c.

(c) 1859, &c.

(d) 25/93 and 12/17.

CLIMATOLOGICAL DATA—BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends.	36	12	12	12	36	14	36	31	14
January ..	29.872	361 1/22	0.11	4,599	E & S E	6.562	5.5	5.7	3.1
February ..	29.902	347 5/22	0.14	4,525	S E	5.219	5.1	5.5	1.9
March ..	29.958	305 29/16	0.09	4,161	S E & S	4.778	4.3	5.2	5.1
April ..	30.050	335 6/21	0.08	3,700	S	3.707	3.2	4.5	8.2
May ..	30.088	307 20/22	0.07	3,641	S	2.824	3.3	4.4	8.4
June ..	30.066	307 23/16	0.07	3,467	S	2.125	2.2	4.2	8.0
July ..	30.070	311 18/22	0.07	3,592	S to W	2.329	2.4	3.7	11.6
August ..	30.095	306 5/22	0.08	3,866	S	2.919	3.5	3.5	12.0
September ..	30.039	269 19/21	0.07	3,569	S	3.697	5.8	3.6	11.6
October ..	30.005	325 25/18	0.09	3,981	N E	5.159	6.9	4.0	8.0
November ..	29.957	272 22/21	0.11	4,346	N E	5.995	8.2	4.7	6.3
December ..	29.886	295 21/13	0.12	4,661	N E	6.619	8.6	5.2	3.6
Year { Totals ..	—	—	—	—	S to E and N E	51.933	59.0	—	87.8
{ Averages ..	29.999	—	0.09	4,009	—	—	—	4.5	—
{ Extremes ..	—	361 1/1/22	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	36	36	36	36	36	36	36	36	14
January ..	85.4	68.8	77.1	108.9 14/02	58.8 4/93	50.1	166.4 10/17	49.9 4/93	219.2
February ..	84.4	68.2	76.3	101.9 11/04	58.7 (a)	43.2	165.2 6/10	49.3 9/89	199.9
March ..	82.3	66.3	74.3	99.4 5/19	52.4 29/13	47.0	160.0 1/87	45.4 29/13	204.4
April ..	79.1	61.6	70.4	95.2 (b)	48.6 17/00	46.6	153.8 11/16	37.0 17/00	206.4
May ..	73.5	55.4	64.4	88.8 18/97	41.3 24/99	47.5	147.0 1/10	29.8 8/97	191.6
June ..	69.4	51.0	60.2	88.9 19/18	36.3 29/08	52.6	136.0 3/18	25.4 23/88	161.9
July ..	68.4	48.4	58.4	83.4 28/98	36.1 (c)	47.3	146.1 20/15	23.9 11/90	192.5
August ..	71.1	49.8	60.4	87.5 28/07	37.4 6/87	50.1	141.9 20/17	27.1 9/99	229.3
September ..	75.7	54.8	65.2	95.2 16/12	40.7 1/96	54.5	155.5 26/03	30.4 1/89	229.0
October ..	79.8	59.9	69.8	101.4 18/93	43.3 3/99	58.1	157.4 31/18	34.9 8/89	248.0
November ..	83.0	64.2	73.6	106.1 18/13	48.5 2/05	57.6	162.3 7/89	38.8 1/05	241.8
December ..	85.3	67.5	76.4	105.9 26/93	56.4 13/12	49.5	160.4 7/14	49.1 3/94	241.5
Year { Averages ..	78.1	59.7	68.9	—	—	—	—	—	2565.5d
{ Extremes ..	—	—	—	108.9 14/1/02	36.1 (c)	72.8	166.4 10/1/17	23.9 11/7/90	—

(a) 10 and 11/04.

(b) 9/96 and 5/03.

(c) 12/94 and 2/96.

(d) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).				Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	
No. of yrs. over which observation extends	36	36	36	71	63	71	71	—	36
January ..	67	79	53	6.42	14	27.72 1895	0.32 1919	18.31 21/87	5.5
February ..	71	82	55	6.35	14	40.39 1893	0.58 1849	8.36 16/93	5.6
March ..	72	85	56	5.84	15	34.04 1870	nil 1849	11.18 14/08	9.0
April ..	74	80	60	3.59	12	15.28 1867	0.04 1847	4.47 13/16	11.8
May ..	74	85	64	2.88	10	13.85 1876	nil 1846	5.62 9/79	12.6
June ..	74	84	67	2.64	9	14.03 1873	nil 1847	6.01 9/93	10.6
July ..	75	81	61	2.31	8	8.46 1889	nil 1841	3.54 (b)	12.1
August ..	70	80	61	2.14	7	14.67 1879	nil (a)	4.89 12/87	10.0
September ..	65	76	47	2.10	9	5.43 1886	0.10 1907	2.46 2/94	9.7
October ..	61	72	49	2.62	9	9.99 1882	0.14 1900	1.95 20/89	8.1
November ..	60	72	46	3.66	10	12.40 1917	nil 1842	4.46 16/86	4.9
December ..	63	68	52	4.96	12	13.99 1910	0.35 1865	6.60 28/71	4.3
Year { Totals ..	—	—	—	45.51	129	—	—	—	104.2
{ Averages ..	69	—	—	—	—	—	—	—	—
{ Extremes ..	—	85	46	—	—	40.39 2/1893	nil (c)	18.31 21/1/87	—

(a) 1862, 1869, 1880.

(b) 15/76, 16/89.

(c) March, May, June, July, August, and November, various years.

CLIMATOLOGICAL DATA—SYDNEY, NEW SOUTH WALES.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L., 133 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M.n. Sea Level and Standard Gravity from 24 hourly readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. to 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	64	56	56	56	56	43	63	61	59
January ..	29.901	721 1/71	0.36	8,111	N E	5.241	4.8	5.8	2.2
February ..	29.945	871 12/69	0.32	6,977	N E	4.110	4.2	6.0	1.5
March ..	30.012	943 20/70	0.25	6,767	N E	3.553	4.1	5.5	2.3
April ..	30.073	803 6/82	0.22	6,094	N E	2.532	3.9	5.0	3.1
May ..	30.082	758 6/98	0.22	6,322	W	1.745	3.3	4.8	3.7
June ..	30.058	712 7/00	0.27	6,876	W	1.412	2.2	4.8	4.0
July ..	30.074	930 17/79	0.27	7,083	W	1.507	2.4	4.4	4.8
August ..	30.069	756 22/72	0.25	6,842	W	1.871	3.2	4.0	5.3
September ..	30.009	964 6/74	0.29	7,077	W	2.643	4.0	4.4	4.4
October ..	29.972	926 4/72	0.32	7,723	N E	3.801	5.0	5.0	2.8
November ..	29.939	720 13/68	0.33	7,548	N E	4.533	5.5	5.6	1.9
December ..	29.880	938 3/84	0.34	7,991	N E	5.310	5.7	5.6	2.2
Year { Totals ..	—	—	—	—	—	38.258	48.3	—	38.2
Year { Averages ..	30.001	—	0.29	7,118	N E	—	—	5.1	—
Year { Extremes ..	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	64	64	64	64	64	64	61	64	12
January ..	78.4	64.9	71.6	108.5 13/96	51.2 14/65	57.3	164.3 26/15	44.2 18/97	201.8
February ..	77.5	64.9	71.2	101.0 19/66	49.3 28/63	51.7	156.5 7/64	43.4 25/91	178.4
March ..	75.6	62.9	69.2	102.6 3/69	48.8 14/86	53.8	158.0 19/11	39.9 17/13	191.9
April ..	71.2	58.1	64.6	91.0 20/22	44.6 27/64	46.4	144.1 10/77	33.3 24/09	149.7
May ..	65.2	52.2	58.7	86.0 1/19	40.2 22/59	45.8	129.7 1/96	29.3 25/17	131.4
June ..	60.9	48.2	54.6	75.5 13/19	38.0 5/20	37.5	123.0 14/78	28.1 24/11	121.6
July ..	59.3	45.9	52.6	74.9 17/71	35.9 12/90	39.0	124.7 19/77	24.0 4/93	132.4
August ..	62.5	47.5	55.0	82.0 31/84	36.8 3/72	45.2	149.0 30/78	26.1 4/09	183.2
September ..	66.8	51.5	59.2	92.3 27/19	40.8 18/64	51.5	142.2 12/78	30.1 17/05	184.2
October ..	71.2	55.8	63.5	99.7 19/98	42.3 3/18	57.4	151.9 (a)	32.7 9/05	203.7
November ..	74.5	59.7	67.1	102.7 21/78	45.8 1/05	56.9	158.5 28/99	36.0 6/06	190.8
December ..	77.3	63.0	70.2	107.5 31/04	49.3 2/59	58.2	164.5 27/89	41.5 6/09	198.6
Year { Averages ..	70.0	56.2	63.1	—	—	—	—	—	2067.76
Year { Extremes ..	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	164.5 27/12/89	24.0 4/7/93	—

(a) 30 and 31/14. (b) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).						Dew (inches).		
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.		Least Monthly.		Greatest in One Day.	Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	64	64	64	64	64	64		64		64	60	61
January	69	78	58	3.67	14.2	15.26	1911	0.42	1888	7.08 13/11	0.002	1.2
February	72	81	59	4.42	14.0	18.56	1873	0.34	1902	8.90 25/73	0.004	2.0
March	74	85	62	4.97	14.9	18.70	1870	0.42	1876	6.52 9/13	0.008	3.3
April	77	87	63	5.33	13.3	24.49	1861	0.06	1868	7.52 29/60	0.016	5.5
May	76	90	66	5.14	15.0	23.03	1919	0.18	1860	8.36 28/89	0.022	6.2
June	78	89	68	4.84	12.6	16.30	1885	0.19	1904	5.17 16/84	0.018	5.3
July	77	88	65	4.97	12.5	13.21	1900	0.12	1862	5.72 28/08	0.016	5.3
August	73	84	56	3.01	11.3	14.89	1899	0.04	1885	5.33 2/60	0.014	4.9
September	69	79	49	2.91	12.0	14.05	1879	0.08	1882	5.69 10/79	0.008	3.4
October	66	77	46	2.96	12.5	11.14	1916	0.21	1867	6.37 13/02	0.007	3.0
November	66	79	42	2.84	12.3	9.89	1865	0.07	1915	4.23 19/00	0.004	2.1
December	67	77	52	2.85	13.0	15.82	1920	0.23	1913	4.75 13/10	0.003	1.4
Year {	Totals ..	—	—	47.91	157.6	—		—		—	0.122	43.6
	Averages ..	72	—	—	—	—		—		—	—	—
	Extremes ..	—	90	42	—	24.49		0.04	—	8.90	—	—
						April/61		Aug./85		25/2/73		

CLIMATOLOGICAL DATA—MELBOURNE, VICTORIA.

LAT. 37° 49' S., LONG. 144° 58' E. HEIGHT ABOVE M.S.L., 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M.n. Sea Level and Standard Gravity from 9 a.m., 3 & 9 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m., 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	65	49	49	49	49	50	15	65	15
January ..	29.913	583 10/97	0.29	7,345	S W, S E	6.42	1.7	5.0	7.5
February ..	29.962	566 8/68	0.28	6,441	S W, S E	5.07	2.5	5.0	7.1
March ..	30.033	677 9/81	0.22	6,398	S W, S E	3.96	1.6	5.5	5.3
April ..	30.103	597 7/68	0.19	5,719	S W, N W	2.37	0.9	5.9	4.1
May ..	30.106	693 12/65	0.19	5,958	N W, N E	1.46	0.6	6.5	3.3
June ..	30.074	761 13/76	0.24	6,461	N W, N E	1.10	0.8	6.7	2.3
July ..	30.093	755 8/74	0.23	6,482	N W, N E	1.06	0.6	6.3	3.4
August ..	30.065	637 14/75	0.26	6,882	N W, N E	1.47	1.1	6.3	2.9
September ..	29.999	617 11/72	0.29	7,108	N W, S W	2.31	1.7	6.1	3.8
October ..	29.968	899 5/66	0.29	7,377	S W, N W	3.34	1.8	6.0	4.4
November ..	29.949	734 13/66	0.29	7,083	S W, S E	4.55	2.4	5.9	3.7
December ..	29.896	655 1/75	0.30	7,503	S W, S E	5.76	1.9	5.5	4.3
Year { Totals ..	—	—	—	—	—	38.87	17.6	—	52.1
Year { Averages ..	30.013	—	0.26	6,730	S W, N W	—	—	5.9	—
Year { Extremes ..	—	899 5/10/66	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	67	67	67	67	67	67	63	63	41
January ..	78.2	56.8	67.5	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	268.8
February ..	78.0	57.1	67.6	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	245.5
March ..	74.4	54.6	64.5	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 (a)	208.4
April ..	68.4	50.7	59.5	94.0 (c)	34.8 24/88	59.2	152.0 8/61	25.0 23/97	163.5
May ..	61.4	46.7	54.1	83.7 7/05	29.9 29/16	53.8	142.6 2/59	21.1 26/16	142.0
June ..	56.8	44.0	50.4	72.2 1/07	28.0 11/66	44.2	120.0 11/61	20.4 17/95	112.8
July ..	55.6	41.7	48.6	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	106.9
August ..	58.7	43.4	51.0	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	155.8
September ..	62.6	45.6	54.1	85.0 19/19	31.1 16/08	53.9	142.1 20/67	22.8 8/18	174.0
October ..	67.0	48.2	57.6	98.4 24/14	32.1 3/71	66.3	154.3 28/68	24.8 22/18	208.7
November ..	71.4	51.2	61.2	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	246.5
December ..	75.4	54.2	64.8	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	258.2
Year { Averages ..	67.3	49.5	58.4	—	—	—	—	—	2291.16
Year { Extremes ..	—	—	—	111.2 14/1/62	27.0 21/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

(a) 17/1884 and 20/1897. (b) Total for year. (c) 6/1865 and 17/1922.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).				Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	15	15	15	67	67	67	67	67	15
January ..	58	65	50	1.87	7	5.68 1904	0.04 1878	2.97 9/97	— 2.3
February ..	61	69	53	1.73	7	6.24 1904	0.03 1870	3.37 18/19	— 3.0
March ..	64	71	57	2.20	9	7.50 1911	0.18 1859	3.55 5/19	— 7.3
April ..	71	78	66	2.22	11	6.71 1901	0.33 1908	2.28 22/01	— 8.1
May ..	79	84	73	2.20	13	4.31 1862	0.45 1901	1.85 7/91	— 8.6
June ..	83	87	77	2.09	14	4.51 1859	0.73 1877	1.74 21/04	— 8.4
July ..	82	86	76	1.85	14	7.02 1891	0.57 1902	2.71 12/91	— 10.3
August ..	76	82	70	1.85	14	3.59 1909	0.48 1903	1.87 17/81	— 7.7
September ..	69	76	60	2.47	14	7.93 1916	0.52 1907	2.62 12/80	— 6.4
October ..	62	67	56	2.63	13	7.61 1869	0.29 1914	3.00 17/69	— 6.2
November ..	60	69	52	2.23	11	6.71 1916	0.25 1895	2.57 16/76	— 1.7
December ..	57	69	51	2.31	9	7.18 1863	0.11 1904	2.62 28/07	— 1.5
Year { Totals ..	—	—	—	25.65	136	—	—	—	71.5
Year { Averages ..	68	—	—	—	—	—	—	—	—
Year { Extremes ..	—	87	50	—	—	7.93 9/16	0.03 2/70	3.55 5/3/19	—

CLIMATOLOGICAL DATA—HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L., 177 Ft.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Stan- dard Gravity from 9 a.m. and 3 p.m. readings.	Wind.						Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Cloud, 9 a.m., 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in One Day.		Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.					
						9 a.m.	3 p.m.				
No. of yrs. over which observation extends	38	12		12	12	16		12	15	60	16
January	29.835	500	30/16	0.19	5,911	N N W	S E	5.206	0.9	5.9	2.7
February	29.928	393	19/13	0.13	4,476	N N W	S E	3.804	1.3	5.9	2.6
March	29.937	407	16/21	0.13	4,930	N N W	S E	3.041	1.2	5.9	2.1
April	29.957	475	12/22	0.14	4,988	N N W	N W	2.054	0.8	6.1	1.6
May	29.992	411	3/16	0.12	4,660	N N W	N N W	1.379	0.5	6.0	2.2
June	29.943	569	27/20	0.13	4,753	N N W	N N W	0.894	0.7	6.1	1.7
July	29.930	425	16/21	0.12	4,749	N N W	N N W	0.888	0.7	5.7	2.7
August	29.927	459	30/11	0.13	4,906	N N W	N N W	1.213	0.6	5.9	2.0
September .. .	29.851	516	26/15	0.18	5,616	N N W	N W	2.022	0.9	6.1	1.8
October	29.840	461	8/12	0.18	5,811	N N W	S E	3.160	0.8	6.3	1.7
November .. .	29.800	508	18/15	0.19	5,844	N N W	S E	4.115	1.0	6.3	1.6
December .. .	29.807	486	30/20	0.18	5,693	N N W	S E	4.597	1.3	6.2	1.2
Year {	Totals ..	—	—	—	—	—		32.373	10.7	—	23.9
	Averages ..	29.896	—	0.15	5,195	N N W	S E &	—	—	6.0	—
	Extremes ..	—	569 27/6/20	—	—	— N N W		—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean / Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	52	52	52	76	76	76	35	55	28
January ..	71.4	53.0	62.2	105.0 1/00	40.3 (a)	64.7	160.0 (b)	30.6 19/97	209.3
February ..	71.5	53.3	62.4	104.4 12/99	39.0 20/87	65.4	165.0 24/98	28.3 -/87	176.4
March ..	68.0	50.8	59.4	98.8 5/46	36.0 31/05	62.8	150.0 3/05	27.5 30/02	171.4
April ..	62.7	47.6	55.2	90.0 2/56	30.0 25/56	60.0	142.0 18/93	25.0 -/86	138.7
May ..	57.3	43.6	50.4	77.5 1/41	29.2 20/02	48.3	128.0 (c)	20.0 19/02	131.0
June ..	52.8	41.0	46.9	75.0 7/74	28.0 22/79	47.0	122.0 12/94	21.0 6/87	102.5
July ..	51.9	39.2	45.5	72.0 22/77	27.0 18/66	45.0	118.7 19/96	18.7 16/86	124.3
August ..	55.0	41.0	48.0	77.0 3/76	30.0 10/73	47.0	129.0 -/87	20.1 7/09	140.1
September ..	58.8	43.1	51.0	80.0 9/72	30.0 12/41	50.0	138.0 23/93	22.7 -/86	144.8
October ..	62.8	45.4	54.1	92.0 24/14	32.0 12/89	60.0	156.0 9/93	23.8 (d)	168.6
November ..	66.2	48.3	57.3	98.0 20/88	35.2 5/13	62.8	158.0 18/21	26.0 1/08	197.4
December ..	69.4	51.2	60.3	105.2 30/97	38.0 13/06	67.2	161.0 24/20	27.2 -/86	190.9
Year { Averages ..	62.3	46.5	54.4	—	—	—	—	—	1895.4
Year { Extremes ..	—	—	—	105.2 30/12/97	27.0 18/7/66	78.2	165.0 24/2/98	18.7 16/7/86	—

(a) 3/72 and 2/06.

(b) 5/86 and 13/05.

(c) -/88 and -/92.

(d) 1/86 and -/99.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).				Dew (inches).	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Monthly.
No. of yrs. over which observation extends	39	39	39	80	79	80	80	56	13
January ..	63	77	51	1.79	10	5.91 1893	0.03 1841	2.96 30/16	0.8
February ..	65	80	51	1.45	8	9.15 1854	0.07 1847	4.50 25/54a	2.0
March ..	68	78	58	1.68	10	7.60 1854	0.02 1843	2.79 5/19	4.0
April ..	73	84	61	1.88	11	6.50 1909	0.07 1904	5.02 20/09	9.5
May ..	78	88	68	1.84	13	6.37 1905	0.10 1843	3.22 14/58	13.2
June ..	82	92	68	2.19	14	8.15 1889	0.22 1852	4.11 14/89	7.7
July ..	80	88	72	2.20	14	6.02 1922	0.30 1850	2.51 18/22	8.2
August ..	77	85	64	1.84	14	10.16 1858	0.23 1854	4.35 12/58	8.1
September ..	71	82	60	2.10	14	7.14 1844	0.39 1847	3.50 29/44	4.3
October ..	66	80	51	2.22	15	6.67 1906	0.26 1850	2.58 4/06	3.2
November ..	63	78	50	2.46	14	8.92 1849	0.16 1868	3.97 6/49	1.4
December ..	61	79	49	2.00	11	9.00 1875	0.11 1842	2.48 13/16	0.8
Year { Totals ..	—	—	—	23.65	148	—	—	—	63.2
Year { Averages ..	70	—	—	—	—	—	—	—	—
Year { Extremes ..	—	92	49	—	—	10.16 8/1858	0.02 3/1843	5.02 20/4/09	—

(a) 4.18 on 26/54 also.

§ 3. Australian Hurricanes and Related Storms.*

1. **Types of Windstorms.**—Almost every country has occasional destructive windstorms, and Australia is no exception to the rule. In Australia there are five chief sorts of windstorms: (a) the gales which frequently occur about deep southern depressions, "lows" or southern cyclones; (b) squall winds, which normally occur in violent thunderstorms; (c) the "southerly bursters" and related "line squalls"; (d) tornadoes, "cock-eyed bobs," "cyclones," or "twisters"; (e) hurricanes or "willy-willies," and related tropical cyclonic storms. In addition, there are innumerable dust whirlwinds, which rarely cause serious damage. Of the five chief types enumerated, high latitude cyclones seldom cause much destruction, although, at times, they give ships a stormy passage across the Bight, through Bass Straits, or in the Tasman Sea, especially in winter. The second, or thunder-squall winds, are most frequent in summer, and towards the north. They occasionally unroof houses, blow down trees, or, while they last, give shipmasters an anxious time. The "southerly burster" is a sudden shift of the wind to the south or south-west, and is most frequent and violent along the coast of New South Wales. Occasionally, however, it occurs so far north as Brisbane, and similar sudden shifts of winds are very common. Most of the southerly bursters of gale force accompany the passage eastward of a southern cyclonic system having V-shaped isobars on its northern side. Gales of considerable severity occasionally occur in southerly bursters on the New South Wales coast, and have caused shipwrecks, especially in the days of sailing vessels, and frequently unroofed houses.

The fourth type of windstorm, the tornado, is often very destructive in the area it covers, but fortunately its effects are confined within narrow limits, seldom more than a fraction of a mile wide, or more than a few miles long. As is the case in respect to all types of storms, tornadoes vary in severity. Some cause little more damage than a sharp thunder-squall, while others demolish everything in their paths, twisting off even large trees. Tornadoes are relatively frequent in Australia, especially in summer and in the tropical portions, although they occur occasionally in all parts of the continent. They usually accompany tropical disturbances or "lows." It is not known how frequent they are, since many, because of their small size, do no appreciable damage in the vast sparsely-settled portions of the continent, and are not reported. Indeed, most of them are reported from the south-eastern better-settled part of the continent, although it is practically certain that they are more frequent elsewhere. On an average about 50 a year are reported in the United States. Judging from the numbers recorded, it appears possible that there are as many in Australia.

2. **The Tropical Cyclone or Hurricane.**—The type of storm with which this article is primarily concerned—the tropical cyclone or hurricane—is somewhat similar to the tornado, but affects a far wider strip. Indeed, hurricanes often produce gales throughout a belt three hundred miles wide, and sometimes an area a thousand miles wide will experience them. Furthermore, the hurricane travels for hundreds and sometimes for thousands of miles. Instead of affecting any spot for a few minutes only, as is the case with the tornado and the thunder-squall, its passage normally takes several hours, and sometimes, in the case of slow-moving storms, a day or two. The hurricane, however, is nowhere as powerful as a well-developed tornado. Instead of twisting off all the trees, for example, the hurricane usually uproots a few, breaks off some branches, and strips the leaves. Moreover, the weaker houses only are as a rule demolished. In consequence of the wide area affected, and the great distance travelled, hurricanes, however, are more destructive than tornadoes. They likewise do much more good, since they commonly bring heavy rainfall to a large area instead of to a small one only, and many parts of Australia receive a large share of their rainfall from hurricanes and related storms.

Tropical cyclones occur in most parts of the tropics. They are very frequent (much more frequent than in Australia) in the region of the China Sea, where they are known as typhoons. Many occur in the West Indies, Gulf of Mexico, and in nearby parts of the United States. The Bay of Bengal, the Arabian Sea, the South Indian Ocean, and the South Pacific, are likewise frequently traversed by tropical cyclones.

* Contributed by Stephen S. Visher, M.A., Ph.D. (Chicago), F.R.G.S., F. Am. Meteorol. S., M. Assoc. Am. Geog., etc., Professor of Geography, Indiana State University, U.S.A.; temporarily connected with the Commonwealth Bureau of Meteorology, Melbourne; and D. Hodge, Commonwealth Bureau of Meteorology, Melbourne.

3. Queensland Hurricanes.—In Australia, the Queensland coast is most often affected by hurricanes. During the 30 years 1892–1921 they averaged one or two a year, coupled annually with two or three storms of less severity. Two-thirds of the storms occur in January, February and March, and four-fifths in the five months December to April inclusive. It cannot, however, be said that there is no risk from hurricanes during the other seven months, for one-eleventh of the severe storms of the period 1870–1921 occurred in those months, viz., three in June, one in September and one in November. Including the less severe type of storms, every month except August has had two or more.

Most of the hurricanes which affect Queensland come from the east, and approach the coast somewhere between Townsville and Cooktown. Many recurve near the coast, and pass southward frequently as far as Brisbane, and then move off to the east-south-east. Others recurve some distance east of the coast, near the Barrier Reef, for example, and pass southward and then eastward without causing much damage. Still others, especially those which strike the more northern portions of the York Peninsula, pass inland, and some cross the continent to Western Australia, while others recurve in the interior and pass out to sea again across southern Queensland. While most hurricanes lose force shortly after coming on to the land, some strengthen considerably on reaching the coast after their journey across the land. The Queensland coast is affected by still another type of hurricane—the rarest type—viz., that which has developed or at least is first recorded in the interior of the continent and which then moves east-south-east across the southern part of the State. More numerous meteorological stations would perhaps show that these storms, instead of developing in the interior as they seem to do, enter the interior from the east or north in sparsely-settled districts and are not recorded until they have recurved and are passing out towards the south-east.

4. Western Australian Hurricanes.—Western Australia has, on the average, rather more than one hurricane a year. In the fifty years 1872–1921, 62 severe tropical cyclones were recorded, and for the 20 years, 1902–1921, 27 were recorded. Some years have had three, and one year, 1917, five, while two years in succession have had none. Of the less severe types of storm, Western Australia has fewer than Queensland, there being perhaps one or two a year instead of two or three.

The hurricanes which affect Western Australia come chiefly from three directions, viz., from the east across the Northern Territory, from the north or from the north-west. Of the two last-mentioned, a number develop in the Cambridge Gulf, or in the Arafura Sea south of Timor, move south-westward, recurve not far west of Australia, and come on to the Australian coast from the west-north-west. The area between Broome and Onslow is hit most frequently by such storms. Some change their direction after reaching the coast, and pass southward along it, while others continue into the interior where they often disappear. Some, however, proceed straight on across the continent, and reach the southern coast near the eastern side of the Bight. Adelaide has been affected several times by such storms, once in 1916 quite severely. Of the storms which reach Western Australia from the east, some appear to have developed in the northern interior, while others are known to have come across northern Queensland. Indeed, several recent storms travelled from east of Queensland across the Northern Territory, then far southward along the western coast of Australia, next across the south-western corner of the continent, and thence eastward through Bass Strait to New Zealand, a total of more than 9,000 miles. Few, however, of such storms are destructive over much of the distance. The portion of Western Australia which is most often damaged severely by hurricanes lies far north of Perth, between Geraldton and Broome. Indeed, hurricanes are rare at Perth. Many, however, cross the south-western corner of the continent, pass east of Perth, and reach the Goldfield towns.

In regard to the season of occurrence, hurricanes are most frequent in the hotter months in Western Australia and Queensland. Of the 68 tropical cyclones affecting Western Australia, concerning which facts were obtained by the writers, January had twenty, February sixteen, March twelve, April seven, December eight, November two, and July, September, and October one each.

5. Northern Territory Hurricanes.—The Northern Territory appears to have fewer cyclones than Queensland or Western Australia. Records of 31 only were obtained, in contrast with 126 and 68. Nevertheless, during the 13 years 1909–1921, there was an

average of over one hurricane a year, and this suggests that the information as to earlier years was inadequate. Most of the hurricanes which affect the Northern Territory come from the east, although about one-fifth arrive from the west. The latter appear to be storms which recurve to the north-west of the continent, after having perhaps developed in the Arafura Sea. In respect to season of occurrence, all the recorded storms of the Northern Territory have occurred in the warmer six months, November to April. January, March, and December each had seven; February and November, four each; and April, two.

6. Rate of Hurricane Movement.—The rate of movement of the storms varies from only a few miles a day to 500 or more, the average being, perhaps, 300. It usually is least far to the north while moving westward, and greatest after the recurve has taken place and the storm is moving eastward in higher latitudes. Occasionally storms “hover” or “oscillate” for a day or two, making only slight progress.

7. Local Evidences of Approach of Hurricanes.—The local evidences of the approach of a hurricane consist of a pronounced fall in the barometer, a thickening of the weather, and an increase in the wind velocity. The barometer often falls half-an-inch below normal, and sometimes, in severe storms, more than two inches. The direction in which the storm is moving is indicated by the direction of the wind. Since the wind blows in towards the “low” spirally, clockwise, a storm coming from the west is signalized by a northerly wind, one approaching from the north has easterly winds on its front, and one coming from the east has southerly winds. Since the wind spirals inwards towards the centre it does not follow the isobars, and the angle between the wind and a line connecting the centre and the observer is less than a right angle, usually about 10° or 15° less. Hence a storm moving straight west towards the observer is preceded by a wind from between S. and S.S.W. If the wind direction does not change notably, the storm is coming straight on. If the wind shifts steadily, the centre will pass to one side of the observer. In the case of storms coming from the east, a shift in the wind direction from south to south-west and then to west indicates that the centre is passing to the southward. Conversely, if the wind shifts from southerly to easterly, the centre is passing to the north. In case the centre passes over the observer, the wind will die down, only to spring up from the opposite direction with the same violence as before the calm, as soon as the centre has passed. The duration of the calm depends on the size of the storm, and whether the full width or merely a chord of the “eye of the storm” is experienced. The maximum duration of calm is rarely more than two hours. A progressive rise in the barometer indicates that the storm is passing away. With eastward moving storms, the wind shifts from north to east, and then to south-east as the centre passes to the north. If the centre passes to the south, the wind shifts from north to west, and then to south-west.

8. Prediction of Hurricanes.—The advantages which would accrue from successful long-previous predictions of hurricanes are so great that many attempts have been made to find some method of making such predictions. Up to the present, however, a completely satisfactory result has not been attained. It will, perhaps, be impossible at any time to do more than state the probabilities of a hurricane occurring somewhere in a rather large region. This is due to the many complicated factors influencing atmospheric circulation, and also to the circumstance that the hurricane often affects a narrow zone only. For example, Queensland might experience an unusually large number of hurricanes in a year, but they might recurve far east, passing off without doing much damage, or they might enter the State in sparsely-settled regions, thus causing little destruction. On the other hand, in a year during which only one storm occurred, if the centre passed over some town, even a storm of moderate severity would cause a great deal of damage.

In spite, however, of the present impossibility of making satisfactory predictions, the great interest in forecasting may warrant some statement as to apparent probabilities. With this in view, the distribution of hurricanes in Australia has been studied. The following generalizations are offered as having probably some value in regard to forecasting, but too much weight should not be attached to them.

Taking Australia as a whole, there seems to be a strong tendency for years of many hurricanes to be followed by a year when there are few. Each of the five years since 1890 characterized by few storms followed a year of many storms. In years before 1890

the same relation is indicated, though the relative incompleteness of the data makes the earlier records less valuable. It sometimes happens, however, that several years in succession have about the normal number of storms.

There are some indications of a four-year cycle between maxima. A ten to twelve-year cycle is also faintly suggested by the data at hand, the minima occurring in 1873, 1885, 1895, 1905, 1917, and the maxima in 1872, 1884, 1894, 1909, and 1916. The records are not long enough, however, to prove the existence of either of these cycles.

It was thought possible that the storminess of December might give some indication of the probability of storms in the following months. There seems, however, to be no distinct relationship, for, following a December with a hurricane somewhere in Australia or Fiji, there were, in about a third of the cases, fewer than the normal number of storms during the rest of the season, and in about one-third there were more than the normal number.

In respect to Queensland, whenever there have been hurricanes in December or January, the prospects of having no storm in the rest of the season are very poor, about 1 : 12. Instead, there are nearly equal chances that the rest of the season will have more than the normal number of storms. On the other hand, in those seasons during which no storm occurred in December or January, the likelihood that there will be none during the rest of the year is about equal to the chance of their being an abnormal number. In about one-fifth of the years the first storm of the season occurred in February, and in about another one-fifth the first occurred in March or later.

In Western Australia, according to the data at hand, a December or January hurricane is followed by a storm later in the season nearly four times as often as it is followed by none. If there is no storm anywhere in Western Australia in December or January, the probability of there being no storm during the rest of the season is about 11 : 17, and the probability of their being two storms about 3 : 11.

In about one year in five, on the average, a hurricane occurs somewhere in Queensland during April to July inclusive, and in about one year in six in Western Australia.

[NOTE.—In a Bulletin which it is hoped will be published shortly by the Commonwealth Meteorological Bureau, it is proposed to show the tracks of more than 100 Australian hurricanes and related tropical storms, and to give lists and full details of storms referred to above, as well as lists for Fiji, Tonga, Samoa, and other South Sea Island groups.]

9. Methods of Reducing Losses from Hurricanes.—The question naturally arises as to what can be done to reduce the destructiveness of hurricanes. It may be pointed out in reply that the storms behave with sufficient regularity to enable ships in wireless communication with a number of well-distributed barometric stations to avoid generally the worst part of such storms. Indeed an alert and cautious pilot on the Queensland coast has piloted ships up and down for 40 years almost continuously, without having experienced a disastrous encounter with a hurricane. The storms normally advance so slowly, and the barometric and wind warnings are so sure, that a well-managed steamship can usually avoid disaster by getting out of the storm's course, or, if need be, by seeking shelter and anchoring with two or three anchors. Buildings and crops unfortunately cannot be moved out of the way of the storm and must, therefore, be prepared for it. Buildings of concrete are almost proof against the worst hurricanes, while well-built frame houses anchored by stay cables will usually offer effective resistance. It is very desirable, however, to make at least a part of the house exceptionally strong. In Fiji, and elsewhere, sometimes one or two rooms are made of concrete, and form a haven of refuge in a storm, as well as a vault for valuables. In the case of an all-frame house, it is recommended that the central portion be made doubly secure and provided with an independent roof, so that even if the wind takes the porches and the wings of the house as well as the main roof, there will be little likelihood of its taking all. The independent or supplementary roof is required because of the heavy rains which accompany most hurricanes. In locating the dwelling, allowance must be made for the circumstance that heavy floods often occur. On the coast, high waves are to be expected, and houses should therefore be erected at least 10 feet above normal sea level. Occasionally, indeed, waves reach as high as 20 feet above normal high tide.

In regard to crops, the desirability of selecting those which are little subject to injury during the hurricane season is obvious. Further, steps should be taken to ascertain

as long as possible in advance when a hurricane is to be expected, so that whatever is about ready for harvesting can be garnered. Outlying barometric stations may give several days' warning of the approach of a slowly-moving storm. The Willis Island Station certainly merits an alert observer, and it is desirable that all ships passing along the Queensland coast, and especially between Queensland and the Solomons, New Hebrides and New Caledonia, should be asked to report barometric readings daily, or oftener in case of low pressures to some station like Brisbane, where a specialist can assemble the data and make the necessary forecasts. The importance of more information concerning conditions off the northern coast of Western Australia is also great.

With every precaution, however, insurance is necessary if the tropical portions of Australia are to be fully developed. The Government might, perhaps, provide cheap insurance for buildings and crops, and this could be effected if most of the buildings and crops over a large area were insured. The premiums to be paid would necessarily depend upon the location and upon the character of the buildings and crops.

10. List of Especially Disastrous Hurricanes.—Australian hurricanes which have been especially disastrous include the following : 1875, 24th Dec., Exmouth Gulf, W.A., 69 lives lost ; 1881, 9th Feb., near Roebourne, W.A., 12 vessels lost ; 1884, 30th Jan., Bowen, Qld., nearly the entire town unroofed ; 1887, 22nd April, Ninety-mile Beach, W.A., over 200 lives lost ; 1894, 9th Jan., Roebourne and Cossack, W.A., 40 lives lost ; 1896, 26th Jan., Townsville, Qld., a great deal of damage done over a wide area ; 1897, 6-7th Jan., Darwin, N.T., many lives lost, £150,000 worth of damage in Darwin, and Palmerston demolished ; 1899, 5th Mar., Bathurst Bay, Qld., 300 lives lost ; 1907, 19th Jan., Cooktown, Qld., £20,000 worth of damage done ; 1908, 26th Apr., Lagrange Bay, W.A., 50 lives lost, £140,000 worth of property destroyed ; 1908, 9th Nov., Broome, W.A., perhaps 50 lives lost and £20,000 loss in property ; 1910, 19th Nov., Broome, W.A., 40 lives lost and 26 luggers wrecked ; 1911, 16th Mar., Port Douglas District, Qld., Port Douglas demolished, Cairns and Innisfail damaged ; 1911, 23rd Mar., "Yongala" hurricane ; 1913, 29th Jan., Cairns, Qld., severe damage at Innisfail and Cairns where record floods occurred ; 1918, 20th Jan., Mackay, Qld., 30 lives lost and £1,000,000 worth of damage to property ; 1918, 9th Mar., Innisfail, Qld., town demolished ; 1920, 2nd Feb., Port Douglas, Qld., severe as far west as Victoria River, N.T.

CHAPTER III.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

I. General.—The legislative power of the Commonwealth is vested in the Parliament of the Commonwealth, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State was bi-cameral till 1922, in which year the Queensland Parliament became uni-cameral. In the bi-cameral States it consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly. In Queensland the Legislative Assembly constitutes the Parliament. In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House in the bi-cameral States is known as follows :—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly. The legislative powers of these Parliaments are delimited by the Commonwealth and the State Constitutions. The Assembly (Queensland as pointed out above is now uni-cameral), which is the larger, is always elective, the qualifications for the franchise varying in character. The Council is, in the case of New South Wales, nominated by the Governor-in-Council; in other States it is elective, the constituencies being differently arranged and some property or special qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States is given in Chapter I., and a conspectus of the Constitutions of the Commonwealth and States in Year Book No. 13, pp. 927 to 951. The information given therein respecting Queensland must of course be considerably modified in view of the abolition of the Upper House in 1922.

2. Powers and Functions of the Governor-General and of the Governors.—The Governor-General and the State Governors act under the authority of the Commissions by which they are appointed and the Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act (see page 21 hereinbefore). The powers and duties of the Governor-General were further defined by Royal instructions issued on the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.

The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in cases of offences committed against the laws of the Commonwealth.

The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom alone he is responsible for his official acts.

The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, except those reserved for the Royal Assent. The latter include certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or reserving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

In a publication* in which the above matters are exhaustively discussed, it is indicated that there are important functions in the hands of a Governor, and that his influence may extend beyond what is anticipated by those who are unfamiliar with the activities of actual government. This is, however, essentially a matter of individual character. A Governor is entitled to the fullest confidence of his Ministers, to be informed at once of any important decisions taken by his Cabinet, and to discuss them with the utmost freedom. He can point out objections, give advice, deprecate measures, and urge alterations, subject, however, to his remaining always behind the scenes. It should be remembered, moreover, that the State Executive Councils owe their existence to the Royal Letters Patent constituting the office of Governor and that, in law, the Governor is never bound to accept the advice of his Ministers. He cannot indeed do many things without their advice, for it is provided by law (either in the Constitution or Interpretation Acts, or by authoritative usage) that a Governor-in-Council must act on the advice of the Council. He cannot therefore perform any act in Council without a majority, though he can always refuse to act, and thus force his Ministers either to give way on the point at issue or to resign their posts. Even in the case of a ministerial act,

* "Responsible Government in the Dominions," A. B. Keith, Oxford, Clarendon Press, 1912, Vol. I.

he can forbid a Minister to take any action on pain of dismissal. Nominally a Governor will, of course, be justified in accepting the advice of his Ministers as being a correct statement of the facts and law, but he is not bound to be so satisfied, and in matters of law he must exercise his own judgment if he be in doubt. A Governor is not, however, entitled to refuse to act on the advice of his Ministers because he personally does not approve of their action or policy; his duty is not to his own conscience, but to the people of the State which he governs, and he should execute that duty independently of every other consideration.

Although the above furnishes a brief résumé of the powers of a Governor from a legal point of view, in practice the exercise of his powers is generally limited by his ability to persuade his Ministers as to the desirability of any particular course of action. Disagreement with Ministers is only justifiable in extreme cases, and even then it involves the responsibility of finding other Ministers, who must either show that they have as much support as any other party, or be prepared to administer during a dissolution, pending an appeal to the people. It may be remarked that a Governor who cannot work with Ministers possessing the support of the people must be recalled, unless he has acted on Imperial grounds, and the dispute is not one between him and Ministers, but between the Imperial and State Governments.

It may also be pointed out that a Governor, besides acting according to law, has, within the range of what is lawful, to act according to the instructions of the Secretary of State. He is called upon to do so by the instruments which create his office and appoint him Governor, and he obeys the Secretary of State as the mouthpiece of the Crown. Historically, there have been many cases in which these instructions have placed Governors in opposition to their Ministers.

3. Governor-General and State Governors.—The present Governor-General is the Right Honourable LORD HENRY WILLIAM FORSTER OF LEPE, P.C., G.C.M.G. He assumed office on the 6th October, 1920.

The following is a list of the Governors of the various States of the Commonwealth :—

New South Wales ..	SIR WALTER EDWARD DAVIDSON, K.C.M.G.
Victoria ..	Colonel the Rt. Hon. GEORGE EDWARD JOHN MOWBRAY, EARL OF STRADBROKE, K.C.M.G., C.B., C.V.O., C.B.E.
Queensland ..	Lieutenant-Colonel the Rt. Hon. SIR MATTHEW NATHAN, P.C., G.C.M.G.
South Australia ..	Lieut.-General SIR GEORGE TOM MOLESWORTH BRIDGES, K.C.M.G., C.B., D.S.O.
Western Australia ..	SIR FRANCIS ALEXANDER NEWDIGATE-NEWDEGATE, K.C.M.G.
Tasmania..	Vacant. Administrator of the Government—SIR HERBERT NICHOLLS, Kt. .

4. The Cabinet and Executive Government.—(i) *General.* The sections of the Commonwealth Constitution Act dealing with the Executive Government will be found on page 29 hereinbefore. In both the Commonwealth and the State Legislatures the forms of government have been founded on their prototypes in the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is practically co-extensive with a group of departmental chiefs, who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In the Commonwealth Government, however, as well as in the States of Victoria and Tasmania, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend

its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(ii) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of the proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

The official members of the present Executive Council are given in Chapter I. which also contains a list of previous Commonwealth Ministries. In addition, all living members of past Ministries (see following pages) are technically liable to be officially summoned to attend meetings of the Executive Council.

(iii) *The Appointment of Ministers and of Executive Councillors.* Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls, the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The customary procedure in connexion with the resignation or acceptance of office by a Ministry is described fully in previous issues of the Year Book. (See No. 6, page 942.)

(iv) *Ministers in Upper or Lower Houses.* The subjoined table shows the number of Ministers with seats in the Upper or Lower Houses of each Parliament in June, 1923 :—

MINISTERS—UPPER OR LOWER HOUSES, 1923.

Ministers with Seats in—	C'wealth.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
The Upper House ..	3	2	4	..	2	1	1	13
The Lower House ..	8	10	8	10	4	5	4	49
Total	11	12	12	10	6	6	5	62

(v) *The Cabinet.* (a) *General.* The meetings of this body are private and deliberative. The actual Ministers of the day are alone present, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation, and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament, the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally in no way bound to accept such advice.

(b) *Commonwealth Ministers of State.* The following statement gives the names of the Ministers of State for the Commonwealth who have held office since the inauguration of the Commonwealth Government :—

COMMONWEALTH MINISTERS OF STATE, 1st JANUARY, 1901, to JUNE, 1923.

HOME AND TERRITORIES. (Prior to 14/11/16 known as External Affairs.)			TRADE AND CUSTOMS.		
Name.	From—	To—	Name.	From—	To—
Rt. Hon. E. BARTON, P.C., K.C. (a) (b) ..	1/1/01	23/9/03	Rt. Hon. C. C. KINGSTON, P.C., K.C. ..	1/1/01	24/7/03
Hon. A. DEAKIN (a) ..	23/9/03	26/4/04	Hon. Sir W. J. LYNE, K.C.M.G. ..	7/8/03	26/4/04
Hon. W. M. HUGHES (k) ..	26/4/04	17/8/04	Hon. A. FISHER (h) ..	26/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C. (a) (g) ..	17/8/04	4/7/05	Hon. A. McLEAN ..	17/8/04	4/7/05
Hon. A. DEAKIN (a) ..	4/7/05	12/11/08	Hon. Sir W. J. LYNE, K.C.M.G. ..	4/7/05	29/7/07
Hon. E. L. BATCHELOR ..	12/11/08	2/6/09	Hon. A. CHAPMAN ..	29/7/07	12/11/08
Hon. L. E. GROOM ..	2/6/09	29/4/10	Hon. F. G. TUDOR ..	12/11/08	2/6/09
Hon. E. L. BATCHELOR ..	29/4/10	f 8/10/11	Hon. Sir R. W. BEST, K.C.M.G. ..	2/6/09	29/4/10
Hon. J. THOMAS ..	14/10/11	24/6/13	Hon. F. G. TUDOR ..	29/4/10	24/6/13
Hon. P. McM. GLYNN, K.C.	24/6/13	17/9/14	Hon. L. E. GROOM ..	24/6/13	17/9/14
Hon. J. A. ARTHUR ..	17/9/14	f 9/12/14	Hon. F. G. TUDOR ..	17/9/14	14/9/16
Hon. HUGH MAHON ..	14/12/14	14/11/16	Rt. Hon. W. M. HUGHES, P.C. (k) ..	29/9/16	14/11/16
Hon. F. W. BAMFORD ..	14/11/16	17/2/17	Hon. W. O. ARCHIBALD ..	14/11/16	17/2/17
Hon. P. McM. GLYNN, K.C.	17/2/17	3/2/20	Hon. J. A. JENSEN ..	17/2/17	13/12/18
Hon. A. POYNTON ..	4/2/20	21/12/21	Hon. W. A. WATT (n) ..	13/12/18	17/1/19
Rt. Hon. G. F. PEARCE, P.C. ..	21/12/21	(e)	Hon. W. M. GREENE ..	17/1/19	21/12/21
			Hon. A. S. RODGERS ..	21/12/21	9/2/23
			Hon. AUSTIN CHAPMAN ..	9/2/23	(e)
ATTORNEY-GENERAL.			TREASURER.		
Name.	From—	To—	Name.	From—	To—
Hon. A. DEAKIN ..	1/1/01	23/9/03	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. ..	1/1/01	26/4/04
Hon. J. G. DRAKE ..	23/9/03	26/4/04	Hon. J. C. WATSON (a) ..	26/4/04	17/8/04
Hon. H. B. HIGGINS, K.C.	26/4/04	17/8/04	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G. ..	17/8/04	4/7/05
Hon. Sir J. H. SYMON, K.C.M.G., K.C. ..	17/8/04	4/7/05	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	4/7/05	29/7/07
Hon. I. A. ISAACS ..	4/7/05	11/10/06	Hon. Sir W. J. LYNE, K.C.M.G. ..	29/7/07	12/11/08
Hon. L. E. GROOM ..	11/10/06	12/11/08	Hon. A. FISHER (a) (h) ..	12/11/08	2/6/09
Hon. W. M. HUGHES (k) ..	12/11/08	2/6/09	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	2/6/09	29/4/10
Hon. P. McM. GLYNN ..	2/6/09	29/4/10	Rt. Hon. A. FISHER, P.C. (a)	29/4/10	24/6/13
Hon. W. M. HUGHES (k) ..	29/4/10	24/6/13	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	24/6/13	17/9/14
Hon. W. H. IRVINE, K.C. (j)	24/6/13	17/9/14	Rt. Hon. A. FISHER, P.C. (a)	17/9/14	27/10/15
Hon. W. M. HUGHES (a) (k)	17/9/14	21/12/21	Hon. W. G. HIGGS ..	27/10/15	27/10/16
Hon. L. E. GROOM ..	21/12/21	(e)	Hon. A. POYNTON ..	24/11/16	17/2/17
			Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	17/2/17	27/3/18
			Hon. W. A. WATT (n) ..	27/3/18	15/6/20
			Rt. Hon. Sir JOSEPH COOK, P.C., G.C.M.G. ..	28/7/20	21/12/21
			Hon. S. M. BRUCE, M.C. (p)	21/12/21	9/2/23
			Hon. E. C. G. PAGE ..	9/2/23	(e)
WORKS AND RAILWAYS. (Prior to 14/11/16 known as Home Affairs.)			DEFENCE.		
Name.	From—	To—	Name.	From—	To—
Hon. Sir W. J. LYNE, K.C.M.G. ..	1/1/01	7/8/03	Hon. Sir J. R. DICKSON, K.C.M.G. ..	1/1/01	f 10/1/01
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	7/8/03	26/4/04	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G. (l) ..	17/1/01	7/8/03
Hon. E. L. BATCHELOR ..	26/4/04	17/8/04	Hon. J. G. DRAKE ..	7/8/03	23/9/03
Hon. D. THOMSON ..	17/8/04	4/7/05	Hon. A. CHAPMAN ..	23/9/03	26/4/04
Hon. L. E. GROOM ..	4/7/05	11/10/06	Hon. A. DAWSON ..	26/4/04	17/8/04
Hon. T. T. EWING (c) ..	11/10/06	23/1/07	Hon. J. W. McCAY (m) ..	17/8/04	4/7/05
Hon. J. H. KEATING ..	23/1/07	12/11/08	Hon. T. PLAYFORD ..	4/7/05	23/1/07
Hon. H. MAHON ..	12/11/08	2/6/09	Hon. Sir T. T. EWING, K.C.M.G. ..	23/1/07	12/11/08
Hon. G. W. FULLER ..	2/6/09	29/4/10	Hon. G. F. PEARCE (o) ..	12/11/08	2/6/09
Hon. K. O'MALLEY ..	29/4/10	24/6/13	Hon. J. COOK (i) ..	2/6/09	29/4/10
Hon. JOSEPH COOK (a) (i) ..	24/6/13	17/9/14	Hon. G. F. PEARCE (o) ..	29/4/10	24/6/13
Hon. W. O. ARCHIBALD ..	17/9/14	27/10/15	Hon. E. D. MILLEN ..	24/6/13	17/9/14
Hon. K. O'MALLEY ..	27/10/15	14/11/16	Hon. G. F. PEARCE (o) ..	17/9/14	21/12/21
Hon. P. J. LYNCH ..	14/11/16	17/2/17	Hon. W. M. GREENE ..	21/12/21	9/2/23
Hon. W. A. WATT (n) ..	17/2/17	27/3/18	Hon. E. K. BOWDEN ..	9/2/23	(e)
Hon. L. E. GROOM ..	27/3/18	21/12/21			
Hon. R. W. FOSTER ..	21/12/21	9/2/23			
Hon. P. G. STEWART ..	9/2/23	(e)			

(a) Prime Minister. (b) Afterwards the Rt. Hon. Sir E. Barton, P.C., G.C.M.G., etc. (c) Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. (d) Afterwards the Hon. Sir N. E. Lewis, K.C.M.G. (e) Still in office. (f) Died while holding office. (g) Afterwards the Rt. Hon. Sir G. H. Reid, P.C., G.C.M.G. (h) Afterwards the Rt. Hon. A. Fisher, P.C. (i) Afterwards the Rt. Hon. Sir J. Cook, P.C., G.C.M.G. (j) Afterwards the Hon. Sir W. H. Irvine, K.C.M.G., K.C. (k) Afterwards the Rt. Hon. W. M. Hughes, P.C., K.C. (l) Afterwards Lord Forrest of Bunbury. (m) Afterwards the Hon. Sir J. W. McCay, K.C.M.G. (n) Afterwards the Rt. Hon. W. A. Watt, P.C. (o) Afterwards the Rt. Hon. G. F. Pearce, P.C. (p) Afterwards the Rt. Hon. S. M. Bruce, P.C., M.C.

COMMONWEALTH MINISTERS OF STATE, 1st JANUARY, 1901, TO JUNE, 1923—*continued.*

POSTMASTER-GENERAL.

Name.	From—	To—
Rt. Hon. Sir JOHN FORREST, P.C., G.C.M.G. (i) ..	1/1/01	17/1/01
Hon. J. G. DRAKE ..	5/2/01	7/8/03
Hon. Sir P. O. FYSH, K.C.M.G. ..	7/8/03	26/4/04
Hon. H. MAHON ..	26/4/04	17/8/04
Hon. S. SMITH ..	17/8/04	4/7/05
Hon. A. CHAPMAN ..	4/7/05	29/7/07
Hon. S. MAUGER ..	29/7/07	12/11/08
Hon. J. THOMAS ..	12/11/08	2/6/09
Hon. Sir J. QUICK ..	2/6/09	29/4/10
Hon. J. THOMAS ..	29/4/10	14/10/11
Hon. C. E. FRAZER ..	14/10/11	24/6/13
Hon. AGAR WYNNE ..	24/6/13	17/9/14
Hon. W. G. SPENCE ..	17/9/14	27/10/15
Hon. W. WEBSTER ..	27/10/15	3/2/20
Hon. G. H. WISE ..	4/2/20	21/12/21
Hon. A. POYNTON, O.B.E. ..	21/12/21	9/2/23
Hon. W. G. GIBSON ..	9/2/23	(e)

VICE-PRESIDENT OF THE EXECUTIVE COUNCIL.

Name.	From—	To—
Hon. R. E. O'CONNOR, K.C. ..	1/1/01	23/9/03
Hon. T. PLAYFORD ..	23/9/03	26/4/04
Hon. G. MCGREGOR ..	26/4/04	17/8/04
Hon. J. G. DRAKE ..	17/8/04	4/7/05
Hon. T. T. EWING (e) ..	4/7/05	11/10/06
Hon. J. H. KEATING ..	11/10/06	19/2/07
Hon. Sir R. W. BEST, K.C.M.G. ..	19/2/07	12/11/08
Hon. G. MCGREGOR ..	12/11/08	2/6/09
Hon. E. D. MILLEN ..	2/6/09	29/4/10
Hon. G. MCGREGOR ..	29/4/10	24/6/13
Hon. J. H. MCCOLL ..	24/6/13	17/9/14
Hon. A. GARDINER ..	17/9/14	27/11/16
Hon. W. G. SPENCE ..	27/11/16	17/2/17
Hon. E. D. MILLEN ..	17/2/17	16/11/17
Hon. L. E. GROOM ..	16/11/17	27/3/18
Hon. E. J. RUSSELL ..	27/3/18	21/12/21
Hon. JOHN EARLE ..	21/12/21	9/2/23
Hon. L. ATKINSON ..	9/2/23	(e)

THE NAVY.

(Amalgamated with Defence before 1915, and after 21st December, 1921.)

Name.	From—	To—
Hon. J. A. JENSEN ..	12/7/15	17/2/17
Rt. Hon. J. COOK, P.C. (i) ..	17/2/17	28/7/20
Hon. W. H. LAIRD SMITH ..	28/7/20	21/12/21

REPATRIATION.

Name.	From—	To—
Hon. E. D. MILLEN ..	28/9/17	9/2/23

EXTERNAL AFFAIRS (revived December, 1921).

Name.	From—	To—
Rt. Hon. W. M. HUGHES, P.C., K.C. ..	21/12/21	9/2/23
Hon. S. M. BRUCE, M.C. (a) (p)	9/2/23	(e)

HEALTH.

Name.	From—	To—
Hon. W. M. GREENE ..	10/3/21	9/2/23
Hon. A. CHAPMAN ..	9/2/23	(e)

WITHOUT PORTFOLIO.

Name.	From—	To—	Name.	From—	To—
Hon. N. E. LEWIS (d) ..	1/1/01	23/4/01	Hon. J. A. JENSEN ..	17/9/14	12/7/15
Hon. Sir P. O. FYSH, K.C.M.G. ..	23/4/01	7/8/03	Hon. E. J. RUSSELL ..	17/9/14	27/3/18
Hon. J. H. KEATING ..	5/7/05	11/10/06	Hon. W. H. LAIRD SMITH ..	14/11/16	17/2/17
Hon. S. MAUGER ..	11/10/06	29/7/07	Hon. L. E. GROOM ..	17/2/17	16/11/17
Hon. J. H. COOK ..	28/1/08	12/11/08	Hon. A. POYNTON ..	26/3/18	4/2/20
Hon. J. HUTCHISON ..	12/11/08	2/6/09	Hon. G. H. WISE ..	26/3/18	4/2/20
Hon. A. DEAKIN (a) ..	2/6/09	29/4/10	Hon. W. M. GREENE ..	26/3/18	17/1/19
Col. Hon. J. F. G. FOXTON, C.M.G. ..	2/6/09	29/4/10	Hon. R. B. ORCHARD ..	26/3/18	31/1/19
Hon. E. FINDLEY ..	29/4/10	24/6/13	Hon. Sir G. de L. RYRIE, K.C.M.G., C.B., V.D. ..	4/2/20	9/2/23
Hon. C. E. FRAZER ..	29/4/10	14/10/11	Hon. W. H. LAIRD SMITH ..	4/2/20	28/7/20
Hon. E. A. ROBERTS ..	23/10/11	24/6/13	Hon. A. S. RODGERS ..	28/7/20	21/12/21
Hon. J. S. CLEMONS ..	24/6/13	17/9/14	Hon. H. LAMOND ..	21/12/21	9/2/23
Hon. W. H. KELLY ..	24/6/13	17/9/14	Hon. R. V. WILSON ..	9/2/23	(e)
Hon. H. MAHON ..	17/9/14	14/12/14	Hon. T. W. CRAWFORD ..	9/2/23	(e)

(c) *State Ministries.* The names of the members of the Ministries in each State in June, 1923, are shown in the following statement :—

STATE MINISTRIES, 1923.

NEW SOUTH WALES.

<i>Premier—</i> HON. SIR G. W. FULLER, K.C.M.G.	<i>Secretary for Public Works and Minister for Railways and State Industrial Enterprises—</i> HON. R. T. BALL.
<i>Vice-President of the Executive Council—</i> HON. SIR J. H. CARRUTHERS, K.C.M.G., LL.D., M.L.C.	<i>Minister for Agriculture—</i> CAPTAIN THE HON. F. A. CHAFFEY.
<i>Secretary for Lands and Minister for Forests—</i> HON. W. E. WEARNE.	<i>Minister of Public Instruction—</i> HON. A. BRUNTNELL.
<i>Colonial Secretary and Minister for Public Health—</i> HON. C. W. OAKES, C.M.G.	<i>Secretary for Mines and Minister for Local Government—</i> HON. J. C. L. FITZPATRICK.
<i>Attorney-General—</i> HON. T. R. BAVIN.	<i>Minister of Justice—</i> HON. T. J. LEY.
<i>Treasurer—</i> HON. SIR A. A. C. COCKS, K.B.E.	<i>Minister for Labour and Industry—</i> HON. E. H. FARRAR, M.L.C.

VICTORIA.

<i>Premier and Minister of Agriculture and of Water Supply—</i> HON. H. S. W. LAWSON.	<i>Minister of Railways and Mines—</i> HON. S. BARNES.
<i>Treasurer—</i> HON. SIR W. M. MCPHERSON, K.B.E.	<i>Chief Secretary and Minister of Public Health—</i> HON. M. BAIRD.
<i>Attorney-General and Solicitor-General—</i> HON. SIR A. ROBINSON, K.C.M.G., M.L.C.	<i>Commissioner of Crown Lands and Survey—</i> HON. D. S. OMAN.
<i>Minister of Public Instruction and of Labour and of Forests—</i> HON. SIR A. J. PEACOCK, K.C.M.G.	<i>Ministers without Portfolio—</i> HON. J. K. MERRITT, M.L.C. HON. G. M. DAVIS, M.L.C. HON. H. ANGUS. HON. J. W. PENNINGTON.
<i>Commissioner of Public Works—</i> HON. F. G. CLARKE, M.L.C.	

QUEENSLAND.

<i>Premier, Vice-President of the Executive Council, Chief Secretary, and Treasurer—</i> HON. E. G. THEODORE.	<i>Attorney-General—</i> HON. J. MULLAN.
<i>Secretary for Agriculture and Stock—</i> HON. W. N. GILLIES.	<i>Secretary for Public Instruction—</i> HON. J. HUXHAM.
<i>Secretary for Mines—</i> HON. A. J. JONES.	<i>Home Secretary—</i> HON. J. STOPFORD.
<i>Secretary for Railways—</i> HON. J. LARCOMBE.	<i>Secretary for Public Lands—</i> HON. W. MCCORMACK.
	<i>Secretary for Public Works—</i> HON. W. F. SMITH.
	<i>Minister without Portfolio—</i> HON. F. T. BRENNAN.

SOUTH AUSTRALIA.

Premier and Attorney-General—

HON. SIR H. N. BARWELL, K.C.M.G.

Treasurer and Minister of Railways and of Industry—

HON. W. HAGUE.

Commissioner of Crown Lands and Immigration and Minister of Irrigation and of Repatriation—

HON. G. R. LAFFER.

*Chief Secretary, Minister of Marine, and Minister Controlling Wheat Scheme—*HON. SIR J. G. BICE, K.C.M.G.,
M.L.C.*Commissioner of Public Works and Minister of Mines and of Education—*

HON. T. PASCOE, M.L.C.

Minister of Agriculture and Assistant Minister of Repatriation—

HON. G. F. JENKINS.

WESTERN AUSTRALIA.

Premier, Colonial Treasurer, and Minister for Lands and Repatriation—

HON. SIR JAMES MITCHELL, K.C.M.G.

Minister for Education, North-Western Territory, and Justice—

HON. JOHN EWING, M.L.C.

Minister for Public Works, Water Supply, Sewerage and Drainage, and Trading Concerns—

HON. W. J. GEORGE, C.M.G.

Minister for Mines, Railways, Police, Industries, and Forests—

HON. J. SCADDAN.

Colonial Secretary and Minister for Public Health—

HON. R. S. SAMPSON.

Minister for Agriculture—

HON. H. K. MALEY.

TASMANIA.

Premier and Minister for Lands, Works and Agriculture—

HON. J. B. HAYES, C.M.G.

Attorney-General and Minister for Education—

HON. W. B. PROPSTING, C.M.G., M.L.C.

Treasurer and Minister for Railways—

HON. SIR W. H. LEE, K.C.M.G.

Chief Secretary and Minister for Mines—

HON. E. F. BLYTH.

Minister without Portfolio—

HON. A. HEAN, C.M.G.

5. **Number of Members of the Legislatures.**—The following table shows the number of members in each of the legislative chambers at 30th June, 1923 :—

MEMBERS OF COMMONWEALTH AND STATE PARLIAMENTS, 1923.

Members in—	C'wealth.	N.S.W.	Vict.	Q'land. (a)	S. Aust.	W. Aust.	Tas.	Total.
Upper House ..	36	80	34	..	20	30	18	218
Lower House ..	76	90	65	72	46	50	30	429
Total ..	112	170	99	72	66	80	48	647

(a) Council abolished, 1922.

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

6. Enactments of the Parliament.—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see Chapter I.). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States, in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

§ 2. Parliaments and Elections.

1. Qualifications for Membership and for Franchise.—The conspectus in § 4 of "General Government" in Year Book No. 13 contains particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shows concisely the qualifications necessary for membership and for the franchise in each House. (It must be remembered, however, that Queensland abolished the Upper House in 1922.) Disqualification of persons otherwise eligible, either as members or voters, is generally on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in a Government contract, or being an undischarged bankrupt.

2. The Federal Parliament.—The Senate consists of 36 members, six being returned by each of the original federating States. Members of this character are elected for a term of six years, but by a provision in the Constitution a certain number retire at the end of every third year, although they are eligible for re-election. In accordance with the Constitution, the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5; Northern Territory, 1—total, 76. The Constitution provides for a minimum of five members for each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators, each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £1,000 per annum. Further information regarding the Senate and the House of Representatives is given in Chapter I.

3. Federal Elections.—There have been eight complete Parliaments since the inauguration of Federation. The fifth Parliament, which was opened on the 9th July, 1913, was dissolved on the 30th July, 1914, in somewhat unusual circumstances. Under Section 27 of the Constitution, it is provided that, should the Senate fail to pass, or pass with amendments, any proposed law previously passed by the House of Representatives, and should the latter House, after a specified interval, again pass the proposed law, with or without the amendments of the Senate, and the Senate for a second time reject it or pass it with amendments to which the lower House will not agree, then the Governor-General may dissolve the two Houses simultaneously. For the first time in the history of the Commonwealth this deadlock between the Senate and the House of Representatives occurred in the second session of the fifth Parliament, and in accordance with the section

of the Constitution referred to above, both Houses were dissolved by the Governor-General. The first session of the ninth Parliament opened on the 28th February, 1923. Particulars regarding the last five Commonwealth elections may be found in the table given hereunder :—

FEDERAL ELECTIONS, 1913 to 1922.

Date.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted.		
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.
31st May, 1913 ..	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66
5th September, 1914 ..	1,478,468	1,333,047	2,811,515	1,139,933	902,403	2,042,336	77.10	67.69	72.64
5th May, 1917 ..	1,444,133	1,391,194	2,835,327	1,184,663	1,018,138	2,202,801	82.03	73.18	77.69
13th December, 1919 ..	1,439,818	1,410,044	2,849,862	1,094,534	938,403	2,032,937	76.02	65.55	71.33
16th December, 1922 ..	1,494,508	1,487,916	2,982,424	966,551	761,695	1,728,246	64.67	51.19	57.95

THE SENATE.

31st May, 1913 ..	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66
5th September, 1914 ..	1,478,468	1,333,047	2,811,515	1,139,933	902,403	2,042,336	77.10	67.69	72.64
5th May, 1917 ..	1,444,133	1,391,194	2,835,327	1,184,663	1,018,138	2,202,801	82.03	73.18	77.69
13th December, 1919 ..	1,439,818	1,410,044	2,849,862	1,094,534	938,403	2,032,937	76.02	65.55	71.33
16th December, 1922 ..	1,494,508	1,487,916	2,982,424	966,551	761,695	1,728,246	64.67	51.19	57.95

THE HOUSE OF REPRESENTATIVES.

31st May, 1913 ..	1,401,042	1,260,335	2,661,377	1,078,997	876,728	1,955,723	77.01	69.56	73.49
5th September, 1914 ..	1,225,990	1,122,451	2,348,441	954,768	772,138	1,726,906	77.88	68.79	73.53
5th May, 1917 ..	1,262,527	1,207,938	2,470,465	1,041,552	892,926	1,934,478	82.50	73.92	78.30
13th December, 1919 ..	1,395,165	1,367,468	2,762,633	1,063,029	914,816	1,977,845	76.19	66.90	71.59
16th December, 1922 ..	1,396,020	1,378,254	2,774,274	920,177	726,686	1,646,863	65.91	52.72	59.36

The percentage of electors who exercised the franchise at each election rose from 53.04 for the Senate and 55.69 for the House of Representatives in 1901 to the maximum of 77.69 and 78.30 respectively in 1917. The next election in 1919 showed a considerable falling off, and in 1922 the decrease was still more marked, the respective percentages for that year being 57.95 and 59.36, or very little more than those for 1901.

4. Federal Referenda.—(i) *Introductory.* According to section 128 of the Act, any proposed law for the alteration of the Constitution must, in addition to being passed by an absolute majority of each House of Parliament, be submitted to a referendum of the electors in each State, and must further be approved by a majority of the States and of the electors who voted. Several referenda have been held from time to time, but in two cases only has any proposed law been assented to by the required majority of the electors.

(ii) *Senate Elections Referendum, 1906.* A referendum was held on the 12th December, 1906, at which the question of altering from January to July the date at which the term of service of a senator begins, and other details connected with the election of senators, were submitted for decision by the electors. The number of members who voted in favour of the amendment was 774,011 and of those not in favour 162,470; the amendment was therefore carried. Only 50.17 per cent. of the electors voted.

(iii) *Finance and State Debts Referendum.* Simultaneously with the general election of the 13th April, 1910, the electors were asked to decide regarding the alteration of the Constitution on two points, viz. :—(a) an alteration of the financial arrangements between the Commonwealth and the States, and (b) giving the Commonwealth power to take over the debts of the States, whenever incurred. The former proposal was rejected, 645,514 electors having voted in favour, and 670,838 not in favour, while the latter proposal was accepted by 715,053 votes to 586,271 votes. Of the voters on the roll, 62.16 per cent. voted.

(iv) *Legislative Powers Referendum, 1910.* The object of the proposed law submitted to this referendum was to give the Commonwealth Parliament power to deal with the following matters :—(a) Trade and Commerce, without any limitations, instead of " Trade

and Commerce with other countries, and among the States" only. (b) The control and regulation of corporations of all kinds (except those formed not for the acquisition of gain). At present only "Foreign corporations and trading and financial corporations formed within the limits of the Commonwealth" come under the jurisdiction of the Federal Parliament. (c) Labour and employment, including wages and conditions of labour and the settlement of industrial disputes generally, including disputes in relation to employment on State railways. (Conciliation and arbitration by the Commonwealth operate only in the case of any industrial dispute extending beyond the limits of any one State), and (d) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services.

The referendum was held on the 26th April, 1911, and the number of votes cast in favour of the proposed law was 483,356, and against it 742,704, the majority against being 259,348. The percentage of electors who cast effective votes was 52.36, and the proposal was rejected in every State except Western Australia.

(v) *Monopolies Referendum, 1910.* It was proposed to insert in the Constitution the following sub-section:—"When each House of Parliament, in the same session, has by resolution declared that the industry or business of producing, manufacturing, or supplying goods, or of supplying any specified services, is the subject of any monopoly, the Parliament shall have power to make laws for carrying on the industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connexion with the industry or business." The voting on this question was held simultaneously with that on the preceding proposal, and the proposed law was rejected, 488,668 voters casting their votes in favour, and 736,932 against, the majority against being 248,264. Of the electors on the roll, 52.34 per cent. voted effectively, and the only State which voted in favour of the law was Western Australia.

(vi) *Legislative Powers and Monopolies Referendum, 1913.* On the 31st May, 1913, the same proposed alterations were again submitted to the people as five distinct laws, with an additional one whereby the condition of employment and the settlement of disputes relating thereto in the several State railway services might be brought within the jurisdiction of the Commonwealth. All six proposed laws were rejected. The following table shows the numbers of votes cast for and against each proposed law:—

COMMONWEALTH REFERENDA, 1913.—RESULTS OF VOTING.

Nature of Proposal.				Votes in Favour.	Votes Not in Favour.
Trade and Commerce	..	..	..	958,419	982,615
Corporations	..	..	..	960,711	986,824
Industrial Matters	..	..	..	961,601	987,611
Railway Disputes	..	..	..	956,358	990,046
Trusts	..	..	..	967,331	975,943
Nationalization of Monopolies	..	..	..	917,165	941,947

The percentage of electors who voted was nearly 74, and the States of Queensland, South Australia and Western Australia were in favour of the proposals, while the other three States were not in favour.

(vii) *Military Referendum, 1916.* A referendum was held on the 28th October, 1916, when the following question with regard to military service was submitted to the people:—"Are you in favour of the Government having, in this grave emergency, the same compulsory powers over citizens in regard to requiring their military service, for the term of this War, outside the Commonwealth, as it now has in regard to military service within the Commonwealth?" In New South Wales, Queensland and South Australia the majority of the voters was not in favour, while in the other States the proposal was carried. The number of votes cast in favour was 1,087,557, and those cast not in favour was 1,160,033, the net result being a majority of 72,476 votes not in favour. Of the electors on the roll, 82.75 per cent. voted.

(viii) *Military Referendum, 1917.* A further referendum was held on the 20th December, 1917, the question being, "Are you in favour of the proposal of the Commonwealth Government for reinforcing the Australian Imperial Force oversea?" The proposal was that, while voluntary enlistment was to continue, compulsory reinforcements should be called up by ballot to make the total reinforcements up to 7,000 per month. In New South Wales, Victoria, Queensland and South Australia the majority of voters was not in favour of the prescribed question. The number of votes cast in favour was 1,015,159 and of those not in favour 1,181,747, the net result being a majority of 166,588 votes not in favour. The percentage of electors who voted was 81.34.

(ix) *Legislative Powers and Nationalization of Monopolies Referendum, 1919.* On the 19th December, 1919, proposals were submitted to a referendum of the electors for the alteration of the Constitution in relation to the extension of the legislative powers of the Commonwealth in regard to industrial disputes and to the nationalization of monopolies. In each case the majority of votes was not in favour of the proposed alteration. For the increase of legislative powers, 911,357 votes were cast in favour, and 924,160 against, and for the nationalization of monopolies, the number of votes in favour was 813,880 and not in favour 859,451, consequently both proposals were rejected, the former by 12,803 votes and the latter by 45,571 votes. The percentage of electors who voted on the former question was 64.41 and on the latter 58.72, although ballot-papers were issued to 71.33 of the voters enrolled. The States voting in favour of both proposals were Victoria, Queensland and Western Australia.

5. The Parliament of New South Wales.—(i) *Constitution.* The Legislative Council in this State is a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, and the number of members at the latest available date was eighty. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is held not to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. Nine electorates return five members each, and fifteen return three members each. The duration of Parliament is limited to three years.

(ii) *Particulars of Elections.* Since the introduction of responsible government in New South Wales there have been twenty-five complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-sixth opened on the 26th April, 1922. The last mentioned Parliament was elected on the 25th March, 1922, under the proportional representation system. Particulars of voting at elections from 1910 to 1923 are given below :—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1910 to 1922.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1910	458,626	409,069	867,695	322,199	262,154	584,353	72.53	65.52	69.20
1913	553,633	484,366	1,037,999	385,838	302,389	688,227	72.20	64.55	68.63
1917	574,308	535,522	1,109,830	328,030	295,354	623,384	62.40	60.57	61.52
1920	607,859	574,736	1,182,595	363,115	285,594	648,709	61.21	50.89	54.85
1922	655,045	631,907	1,286,952	466,949	408,515	875,464	71.29	64.65	68.03

The franchise was extended to women (Women's Franchise Act) in 1902, and was exercised for the first time at a State election in 1904.

6. The Parliament of Victoria.—(i) *Constitution.* Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of

members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in March, 1923, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one-half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. An elector for the Legislative Assembly may vote only once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. A preferential system of voting (see Year Book No. 6, page 1182) was for the first time adopted in Victoria at the election held in November, 1911.

(ii) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-six complete Parliaments, the first of which opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-sixth closed on the 6th August, 1921. The first session of the twenty-seventh Parliament opened on the 6th September, 1921, and closed on the 5th January, 1922. The second session opened on the 4th July, 1922, and closed on the 5th January, 1923. Particulars of voting at the last five elections are given in the subjoined table:—

VICTORIAN ELECTIONS, 1910 TO 1922.

LEGISLATIVE COUNCIL.

Year.			Electors Enrolled.	Electors Enrolled in Contested Electorates.	Electors who Voted.	Percentage of Electors who Voted in Contested Electorates.
1910	..	..	240,520	136,479	48,053	35.21
1913	..	..	270,175	99,646	47,666	47.89
1916	..	..	300,321	92,421	34,853	37.71
1919	..	..	317,593	133,058	40,393	30.35
1922	..	..	353,440	161,731	47,008	29.07

LEGISLATIVE ASSEMBLY.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1911	341,027	360,424	701,451	203,661	190,528	394,189	68.43	59.12	63.61
1914	398,234	411,792	810,026	166,502	153,448	319,950	57.55	50.46	53.92
1917	397,585	430,645	828,230	172,317	184,682	356,999	54.30	54.12	54.21
1920	418,085	450,763	868,848	232,604	235,621	468,225	66.23	61.38	63.70
1921	414,818	456,638	871,456	167,812	158,415	326,227	61.29	53.53	57.26

The franchise was extended to women by the Adult Suffrage Act 1908.

7. The Parliament of Queensland.—(i) *Constitution.* As pointed out previously, the Legislative Council in Queensland was abolished in 1922, the date of Royal assent to the Act being the 23rd March. The Legislative Assembly is composed of seventy-two members, and the State is divided into that number of electoral districts. A modified system of optional preferential voting is in operation in Queensland. (See Year Book No. 6, page 1183.)

(ii) *Particulars of Elections.* Since the establishment of responsible government in Queensland there have been twenty-two complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the twenty-second

Parliament opened on the 15th November, 1920, and closed on the 13th April, 1923. At the elections held in May, 1915, the principle of compulsory voting was introduced for the first time in Australia. It will be seen that of the total number of electors enrolled, 79.93 per cent. went to the polls. Statistics regarding the last four elections for which details are available are given below. Particulars regarding the election of 1923 will be found in the Appendix.

QUEENSLAND LEGISLATIVE ASSEMBLY ELECTIONS, 1909 TO 1920.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1912	173,801	135,789	309,590	122,844	95,795	218,639	75.92	75.02	75.52
1915	184,627	150,568	335,195	140,396	125,844	266,240	86.46	90.09	88.14
1918	233,342	191,074	434,416	176,768	163,901	340,669	75.75	85.78	80.27
1920	238,750	206,931	445,681	187,575	168,651	356,226	78.57	81.50	79.93

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under the Elections Acts Amendment Act 1905.

8. The Parliament of South Australia.—(i) *Constitution.* In this State there is a Legislative Council composed of twenty members and a House of Assembly with forty-six members, both chambers being elective. The State is divided into five districts, which return four members each to the Legislative Council. For the House of Assembly, eight districts return three members each, and eleven districts two members each.

(ii) *Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been twenty-three complete Parliaments, the first of which was opened on the 22nd April, 1857. The first session of the twenty-fourth Parliament began on the 21st July, 1921. Particulars of voting at the last five elections are given below :—

SOUTH AUSTRALIAN ELECTIONS, 1910 to 1921.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.

LEGISLATIVE COUNCIL.

1910..	48,145	16,157	64,302	32,540	9,356	41,896	81.84	65.89	77.64
1912..	59,228	19,985	79,213	40,709	13,016	53,725	80.91	72.56	78.71
1915..	66,614	21,635	88,249	11,436	4,808	16,244	75.69	71.25	74.32
1918..	71,510	23,461	94,971	42,987	11,800	54,787	60.11	50.30	57.69
1921..	69,986	23,062	93,048	38,597	11,309	49,906	64.23	53.96	61.57

HOUSE OF ASSEMBLY.

1910..	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03	71.04
1912..	117,440	106,971	224,411	87,530	73,732	161,262	74.53	68.93	71.86
1915..	128,594	124,797	253,391	70,898	65,157	136,055	77.22	72.64	74.95
1918..	126,669	132,043	258,712	71,501	62,742	134,243	56.45	47.52	51.89
1921..	134,091	137,931	272,022	91,451	77,600	169,051	70.10	57.64	63.77

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under the Constitution Amendment Act 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

9. The Parliament of Western Australia.—(i) *Constitution.* In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten provinces returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral districts. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the junior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected on the same day, then the junior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(ii) *Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been ten complete Parliaments, the first of which was opened on the 30th December, 1890, while the eleventh Parliament was elected on 12th March, 1921. The preferential system of voting in use in Western Australia is described in Year Book No. 6, page 1184. Particulars relating to the latest five Assembly and Council elections respectively are given in the tables below:—

WESTERN AUSTRALIAN ELECTIONS, 1908 to 1922.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.

LEGISLATIVE COUNCIL.

1914	43,299	12,423	55,722	22,963	5,556	28,519	62.41	56.57	61.18
1916	45,325	13,683	59,008	10,672	2,464	13,136	53.49	50.52	52.91
1918	46,272	14,700	60,972	14,043	3,930	17,973	39.04	31.83	37.20
1920	37,137	14,900	52,037	12,450	3,406	15,856	45.07	28.28	40.27
1922	40,360	14,838	55,198	17,524	4,763	22,287	46.16	33.81	42.82

LEGISLATIVE ASSEMBLY.

1908	83,060	52,919	135,979	46,411	29,412	75,823	66.99	65.65	66.46
1911	91,814	60,831	152,645	53,355	38,281	91,636	74.44	75.50	74.88
1914	126,598	88,143	214,741	54,612	41,993	96,605	56.59	58.29	57.32
1917	93,106	73,845	166,951	45,453	40,167	85,620	59.46	65.51	62.15
1921	89,523	75,165	164,688	54,747	44,211	98,958	69.16	65.22	67.34

Women's suffrage was granted by the Electoral Act of 1899. At the 1921 elections the first woman member elected to an Australian Parliament was returned.

10. The Parliament of Tasmania.—(i) *Constitution.* In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. There are five House of Assembly districts corresponding to the Commonwealth electoral districts, each returning six members, who are elected under a system of proportional representation which first came into force at the 1909 elections. (See Year Book No. 6, page 1185.)

(ii) *Particulars of Elections.* The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been twenty complete Parliaments since the inauguration of responsible government. Particulars of the voting at the last five elections for the House of Assembly are given hereunder :—

TASMANIAN ELECTIONS, HOUSE OF ASSEMBLY, 1912 to 1922.

Year.	Electors Enrolled.			Electors who Voted.			Percentage of Electors who Voted in Contested Electorates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1912	52,853	50,660	103,513	40,713	35,337	76,050	77.03	69.73	73.47
1913	53,372	51,920	105,292	38,700	32,102	70,802	72.51	61.83	67.24
1916	54,466	52,855	107,321	41,427	37,557	78,984	76.06	71.05	73.60
1919	53,205	54,336	107,541	37,037	34,027	71,064	69.61	62.62	66.08
1922	54,958	55,591	110,549	38,529	31,352	69,881	70.11	56.40	63.21

The present members of the Legislative Council have been elected at various dates, and the following particulars are given of the last contested election in each case : number of electors on the roll, 32,508 ; number of votes recorded, male 14,283, female 4,082, total 18,365 ; percentage of persons who voted to the number on the roll, 56.49.

The suffrage was granted to women under the Constitution Amendment Act 1903.

§ 3. Cost of Parliamentary Government.

1. General.—The following statement shows the cost of parliamentary government in the Commonwealth and in each State, as well as the cost per head of population, for the year ended the 30th June, 1922. In order to avoid any incorrect conclusions as to the cost of the Governor-General's or Governor's establishment, it may be pointed out that a very large part of the expenditure (with the exception of the item "Governor's salary") under the head of Governor-General or Governor represents official services entirely outside the Governor's personal interests, and carried out at the request of the Government.

COST OF PARLIAMENTARY GOVERNMENT, 1921-22.

Particulars.	C'with.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. Governor-General or Governor—								
Governor's salary ..	10,000	5,000	5,000	3,000	4,000	3,833	2,458	33,291
Official Secretary's salary ..	650	687	..	300	..	350	..	1,987
Governor's establishments ..	5,705	711	3,168	943	..	2,227	510	13,264
Repairs and maintenance of Governor's residences ..	11,708	2,727	2,490	2,075	2,003	1,256	399	22,658
Miscellaneous ..	..	1,303 (g)	3,068	2,475	191	..	312	7,350
Total ..	28,063	10,428	13,726	8,793	6,194	7,666	3,680	78,550
2. Executive Council—								
Salaries of Officers ..	(a)	473	720	30	..	355	..	1,578
Other expenses ..	(a)	163	17	72	..	2	..	254
Total ..	(a)	636	737	102	..	357	..	1,832
3. Ministry—								
Salaries of Ministers ..	15,300	26,825	10,000	8,904	6,604	6,200	3,680	77,513
Other expenses ..	1,029	1,880	(h)	..	..	5,081	917	8,907
Visits of Commonwealth Ministers to London ..	5,928	..	..	..	..	..	..	5,928
Total ..	22,257	28,705	10,000	8,904	6,604	11,281	4,597	92,348
4. Parliament—								
A. The Upper House:								
Allowances to members ..	34,916	..	..	(k)1,275	5,467	12,044	4,812	58,514
Railway passes ..	b 12,262	14,924	(g)	..	1,260	m3,212	750	32,408
Other expenses of members ..	(b) 701	..	..	..	194	150	6	1,051
B. The Lower House:								
Allowances to members ..	69,395	67,612	26,771	33,149	12,688	20,215	8,400	238,230
Railway passes ..	(c)	17,346	(g)	(i)	2,398	(c)	1,250	21,494
Other expenses of members ..	(c)	3,258	..	1,512	653	300	170	5,893
C. Miscellaneous:								
Salaries of officers and staff ..	19,321	24,992	16,733	6,356	6,133	3,427	4,240	81,202
Printing ..	16,593	21,552	1,682	3,936	6,068	5,111	3,197	107,101
Hansard (including printing) ..	19,465	8,584	7,346	7,677	5,890	..	..	..
Library ..	5,625	911	1,219	1,518	1,072	473	..	..
Refreshment rooms ..	2,089	(e)	2,723	1,250	1,851	1,720	..	..
Water, power, light, and heat ..	1,671	560	569	582	958	..	..	..
Postage, stores, and stationery ..	3,770	1,528	750	449	115	..	..	..
Miscellaneous ..	d 14,976	f 18,889	183	2,480	868	1,680	1,249	71,728
Total ..	200,784	180,156	57,976	60,184	46,115	48,332	24,074	617,621
5. Electoral Office—								
Salaries of officers and staff ..	65,040	2,026	1,072	2,978	2,922	3,167	3,943	167,870
Other expenses ..	52,006	1,893	12,795	15,576	2,858	1,594	..	..
Total ..	117,046	3,919	13,867	18,554	5,780	4,761	3,943	167,870
6. Cost of Elections ..	3,519	68,021	13,907	177	3	1,788	(j)	87,415
7. Royal Commissions and Select Committees ..	34,372	29,507	2,936	2,294	3,047	6,623	400	79,179
GRAND TOTAL ..	406,041	321,372	113,149	99,008	67,743	80,808	36,694	1,124,815
Cost per head of population ..	1s. 5.7d.	3s. 0.2d.	1s. 5.5d.	2s. 6.9d.	2s. 8.3d.	4s. 9.9d.	3s. 4.3d.	4s. 1.0d.

(a) Included under Governor-General. (b) Including Lower House. (c) Included in Upper House. (d) Including Australian Historical Records (£4,704) and stationery. (e) Included in Miscellaneous. (f) Including Parliamentary Works Committee (both Houses) £5,082. (g) £5,000 is paid to the Railway Department to cover issue of passes to State Governor and Staff, members of Parliament of Victoria and other States, and Executive Councillors. (h) See note (g). Ministers are allowed £1 per day when travelling. (i) Not available. Each member has a pass for the whole of the State Railways. (j) Included in Electoral Office. (k) President and Chairman of Committees. (l) Exclusive of travelling expenses of members, free passes, special trains, etc. (m) £3,212 was paid for railway passes, etc., for members of both Houses: in addition to which members of each House have a pass over the whole of the State railways.

§ 4. Commonwealth Government Departments.

The following statement shows the various matters dealt with and the Acts administered by the Minister of each of the Commonwealth Departments:—

COMMONWEALTH GOVERNMENT DEPARTMENTS.

Department.	Matters dealt with.	Acts Administered.
Prime Minister and External Affairs	Administrative (Central)—(a) Channel of communication for all Departments with State, British, Dominion and Foreign Governments, also Consuls in Australia, (b) Executive Council matters, (c) Cabinet and Parliamentary arrangements, (d) Arrangement of Commonwealth functions, etc., (e) Royal Commissions, (f) Historic Memorials, (g) Commonwealth Publicity, etc., (h) Commonwealth Gazettes and Statutes: External Affairs—(a) Intelligence work—International Affairs, (b) League of Nations matters, (c) Representation of Australia abroad, including—High Commissioner's Office, Commissioner in U.S.A., Commercial Agency, Paris, Representation at International Conferences, etc., (d) Consular Appointments, (e) Repatriation and relief of distressed Australians abroad, (f) Administration of New Guinea Territory, (g) Administration of Nauru, (h) Pacific Island Mail Services: Public Service matters, including administration: Public Service Commissioner and Staff: Auditor-General and Staff: Immigration: Commonwealth Shipbuilding: Commonwealth Government Line of Steamers.	Committee of Public Accounts Act 1913–1920: Commonwealth Public Service Act 1902–1918: Commonwealth Public Service (Acting Commissioner) Act 1916: Commonwealth Public Works Committee Act 1913–1914: Commonwealth Salaries Act 1907: High Commissioner Act 1909: Nauru Island Agreement Act 1919: New Guinea Act 1920: Oil Agreement Act 1920: Petherick Collection Act 1911: Royal Commissions Act 1902–1912: Treaty of Peace (Germany) Act 1919–1920: Treaties of Peace (Austria and Bulgaria) Act 1920: War Precautions Act Repeal Act 1920–1922.
Treasury ..	Appropriation and Supply: Banking: Commonwealth Supply and Tender Board: Currency, Coinage and Legal Tender: Government Printing: Insurance: Invalid and Old-age Pensions: Loans to States: Maternity Allowances: New Guinea Territory — Control of expropriated properties:	Appropriation Acts: Audit Act 1901–1920: Bank Notes Tax Act 1910: Bills of Exchange Act 1909–1912: Coinage Act 1909: Commonwealth Bank Act 1911–1920: Commonwealth Inscribed Stock Act 1911–1918: Commonwealth Workmen's Compensation Act 1912: Constitution Alteration (State Debts) Act 1909: Entertainments Tax Act 1916–1919: Entertainments Tax

COMMONWEALTH GOVERNMENT DEPARTMENTS—*continued.*

Department.	Matters dealt with.	Acts Administered.
Treasury — <i>continued.</i>	Pensions and Retiring Allowances: Public Moneys, including Loans: Stamp, Note and Bond Printing: States Debts: Taxation, other than duties of Customs and of Excise: Workmen's Compensation: War Gratuities: Repatriation Section—Advances to the States for soldier land settlement, General repatriation, including employment, grants in aids, vocational training and children's education, Medical Services, including reciprocal medical treatment for soldiers of the United Kingdom and Canada in Australia, hospitals and hostels: Soldier Trust Funds: War Pensions, including Imperial War Pensions.	Assessment Act 1916: Estate Duty Act 1914: Estate Duty Assessment Act 1914–1916: Funding Arrangements Act 1921: Income Tax Act 1922: Income Tax Assessment Act 1922: Invalid and Old-age Pensions Act 1908–1920: Land Tax Act 1910–1922: Land Tax Assessment Act 1910–1916: Life Assurance Companies Act 1905: Loan Acts: Loans Redemption and Conversion Act 1921: Loans Securities Act 1921: Loans Sinking Fund Act 1918: Marine Insurance Act 1909: Maternity Allowance Act 1912: Officers' Compensation Act 1912–1915: Returned Soldiers' Woollen Company Act 1921: States Loan Acts 1916 and 1917: Supply Acts: Superannuation Act 1922; Surplus Revenue Acts 1908, 1909, 1910: Tasmanian Loan Redemption Act 1910: Treasury Bills Act 1914–1915: Trust Fund Advances Act 1910: Trust Fund Advances Act 1910 (No. 2): War Gratuity Acts 1920: War Loan Securities Repurchase Act 1918: War Precautions Act Repeal Act 1920 (Sections 14–18 and 20): War Loan (United Kingdom) Acts 1916: Australian Soldiers' Repatriation Act 1920.
Attorney-General	Bankruptcy and Insolvency: Bills of Exchange and Promissory Notes: Conciliation and Arbitration: Copyright: Crown Law Offices: Designs: Divorce and Matrimonial Causes: Foreign Corporations: Judiciary and Courts: Marriage: Metals (including Australian Metal Exchange): Parliamentary Drafting: Patents: Recognition throughout the Commonwealth of State Laws, Records, and Judicial Proceedings: Service and Execution throughout the Commonwealth of State Process and Judgments: Trade Marks: Trading and Financial Corporations formed within the limits of the Commonwealth.	Acts Interpretation Act 1901–1916: Acts Interpretation Act 1904–1916: Amendments Incorporation Act 1905–1918: Arbitration (Public Service) Act 1920: Bills of Exchange Act 1909–1912: Commonwealth Conciliation and Arbitration Act 1904–1921: Copyright Act 1912: Crimes Act 1914–1915: Designs Act 1906–1912: Enemy Contracts Annulment Act 1915: Evidence Act 1905: Extradition Act 1903: High Court Procedure Act 1903–1915: Industrial Peace Acts 1920: Judiciary Act 1903–1920: Jury Exemption Act 1905–1922: Legal Proceedings Control Act 1919: Parliamentary Papers Act 1908: Patents Act 1903–1921: Patents, Trade Marks and Designs Act 1910: Rules Publication Act 1903–1916: Service and Execution of Process Act 1901–1922: Solicitor-General Act 1916: State Law and Records Recognition Act 1901: Statutory Declarations Act 1911–1922: Trade Marks Act 1905–1922.

COMMONWEALTH GOVERNMENT DEPARTMENTS—*continued.*

Department.	Matters dealt with.	Acts Administered.
Home and Territories	Astronomy : Australian War Museum : Census and Statistics : Commonwealth Literary Fund : Elections : Franchise : Immigration Restriction : Indentured Coloured Labour : Lands and Surveys : Meteorology : Naturalization : Norfolk Island : Northern Territory : Oil (Mineral, Reward for Discovery) : Papua : Passports : Pearl Shelling and Trepang Fisheries in Australian waters beyond Territorial limits : People of races (other than the aboriginal races in any State) for whom it is deemed necessary to make special laws : Seat of Government.	Census and Statistics Act 1905–1920 : Commonwealth Electoral Act 1918–1922 : Contract Immigrants Act 1905 : Emigration Act 1910 : Governor-General's Residence Act 1906 : Immigration Act 1901–1920 : Lands Acquisition Act 1906–1916 : Jervis Bay Territory Acceptance Act 1915 : Meteorology Act 1906 : Nationality Act 1920–1922 : Norfolk Island Act 1913 : Northern Territory Acceptance Act 1910–1919 : Northern Territory (Administration) Act 1910 : Northern Territory Representation Act 1922 : Papua Act 1905–1920 : Passports Act 1920 : Referendum (Constitution Alteration) Act 1906–1919 : Representation Act 1905–1916 : Seat of Government Act 1908 : Seat of Government Acceptance Act 1909 : Seat of Government (Administration) Act 1910 : Senate Elections Act 1903–22 : War Census Act 1915–1916.
Trade and Customs	Board of Trade : Bounties : British Empire Exhibition 1924 : Commercial and Industrial Bureau of Board of Trade : Clearing Office—Enemy debts : Customs and Excise : Film Censorship : Fisheries—other than pearl shell or trepang in Australian waters beyond Territorial limits : Flax : Fruit Pool : Institute of Science and Industry : Lighthouses, Lightships, Beacons, Buoys : Meat Export Trade : Navigation and Shipping : Organization of Trade and Industry : Organization of Dairying Industry : Peace Treaty (Economic Clauses) : Public Trustee : Restriction of Imports and Exports : Sugar Control : Tariff Board : Trade and Commerce : Trading with Enemy : Wheat Pool : Wheat Storage (Erection of Silos).	Australian Industries Preservation Act 1906–1910 : Beer Excise Act 1901–1918 : British Empire Exhibition Appropriation Act 1922 : Butter Agreement Act 1920 : Commerce (Trade Descriptions) Act 1905 : Commercial Activities Act 1919 : Customs Act 1901–1922 : Customs Tariff Act 1921–1922 : Customs Tariff (South African Preference) Act 1906 : Customs Tariff (New Zealand Preference) Act 1921–1922 : Customs Tariff (New Zealand Preference) Act 1922 (No. 2) : Customs Tariff (Industries Preservation) Act 1921 : Distillation Act 1901–1918 : Excise Act 1901–1918 : Excise Procedure Act 1907 : Excise Tariff 1921 : Institute of Science and Industry Act 1920 : Iron and Steel Products Bounty Act 1922 : Lighthouses Act 1911–1919 : Meat Export Bounties Act 1922 : Navigation Act 1912–1920 : Sea Carriage of Goods Act 1904 : Seamen's Compensation Act 1911 : Secret Commissions Act 1905 : Shale Oil Bounty Act 1917–1922 : Spirits Act 1906–1918 : Sugar Purchase Act 1915–1920 : Trading with Enemy Act 1914–1921 : Treaty of Peace Acts : Westralian Farmers' Agreement Act 1920 : Westralian Farmers' Agreement Act 1921 : Wheat Storage Act 1917.

COMMONWEALTH GOVERNMENT DEPARTMENTS—*continued.*

Department.	Matters dealt with.	Acts Administered.
Defence	Naval, Military, and Air Defence and cognate questions : Civil Aviation : Expeditionary Forces.	Air Navigation Act 1920 : Control of Naval Waters Act 1918 : Defence Act 1903–1918 : Deceased Soldiers Estates Act 1918–1919 : Defence (Civil Employment) Act 1918–1922 : Naval Defence Act 1910–1918 : Naval Discipline Act : War Precautions Repeal Act 1920 (Section 3).
Works and Railways	Public Works : Designs, Construction, Addition, Alteration and Maintenance of Public Buildings : Design and Execution of Engineering Works : Railways : Rivers : War Service Homes : Conveyance of Members of Parliament and others.	Commonwealth Railways Act 1917 : Kalgoorlie to Port Augusta Railway Lands Act 1918–1920 : Naval Defence Act 1910–1918 in respect of officers and employees employed or to be employed in a civil capacity by the Department of Works and Railways on or in connexion with the construction of works or establishments for Naval Defence : River Murray Waters Act 1915–1920 : War Service Homes Act 1918–1920.
Postmaster-General	Postal, Telegraphic and Telephonic Services : Wireless Telegraphy and Telephony.	Pacific Cable Act 1911 : Post and Telegraph Act 1901–1916 : Post and Telegraph Rates Act 1902–1920 : Telegraph Act 1909 : Wireless Telegraphy Act 1905–1919.
Health	Administration of the Quarantine Act : The investigation of causes of disease and death, the establishment and control of laboratories for this purpose : The Control of the Commonwealth Serum Laboratories and the commercial distribution of the products manufactured in those Laboratories : The collection of sanitary data, and the investigation of all factors affecting health in industries : The education of the public in matters of public health : The administration of any subsidy made by the Commonwealth with the object of assisting any effort made by any State Government or public authority directed towards the eradication, prevention, or control of any disease : The conducting of campaigns of prevention of disease in which more than one State is interested : The administrative control of the Australian Institute of Tropical Medicine.	The Quarantine Act 1908–1920.

§ 5. Legislation during 1922.

1. **General.**—The following summary refers to the more important legislative enactments of the Commonwealth and State Parliaments during the year 1922. Reference is also made to the principal Ordinances promulgated during the same year in the Northern Territory and Federal Capital Territory. For the sake of convenience these have been included after the heading 2, Commonwealth, immediately following.

2. **Commonwealth.**—(i) *Customs Tariff (New Zealand Preference) Act.* As the outcome of an agreement with New Zealand, a new schedule of duties is arranged for on goods imported direct from New Zealand, which are the produce or manufacture of that Dominion.

(ii) *Treaties of Washington Act.* The building or equipment of any vessel of war without licence from the Minister is prohibited.

(iii) *Defence Retirement Act.* Provision is made for the retirement of any member of the permanent Naval, Military or Air Forces, and for the payment of compensation to such persons who may be so retired.

(iv) *Meat Export Bounties Act.* A bounty is payable of one farthing per pound of fresh or canned beef and one of ten shillings per head of live cattle exported during the last nine months of 1922.

(v) *Tasmanian Grant Act.* A special grant of £85,000 is made to Tasmania.

(vi) *Commonwealth Electoral Act.* Candidates for election may be grouped with the names of other candidates, who belong to the same political party. Minor amendments are also made in the Act of 1918.

(vii) *Entertainments Tax Act.* The rate of entertainments tax is reduced to one penny where the payment for admission is one shilling, increasing by one half-penny for each additional sixpence.

(viii) *Northern Territory Representation Act.* Provision is made for the election to the House of Representatives of a member for the Northern Territory, who, however, is not entitled to vote on any question arising therein.

(ix) *Commonwealth Public Service Act.* This Act consolidates, repeals and amends all previous Acts relating to the Public Service.

(x) *Senate Elections Act.* Fresh provisions are made for the filling of casual vacancies in the Senate.

(xi) *Australian Soldiers' Repatriation Act.* A special schedule of pensions for members of the Forces, who have had one or more limbs amputated, is prescribed.

(xii) *Iron and Steel Products Bounty Act.* Bounties, not exceeding in the aggregate £250,000 in any one financial year, are payable on fencing wire, galvanized sheets, traction engines and wire netting manufactured in Australia.

(xiii) *Customs Tariff (Sugar).* The customs tariff on sugar is raised to £9 6s. 8d. per ton.

(xiv) *Superannuation Act.* This Act provides superannuation allowances for persons employed by the Commonwealth and makes provision for the families of those persons. Both employees and the Government contribute to the fund.

(xv) *Income Tax Assessment Act.* All previous Income Tax Assessment Acts are repealed and the provisions contained therein amended and consolidated.

(xvi) *Income Tax Act.* The rate of taxation for the year ended 30th June, 1922, is fixed by this Act.

(xvii) *Shale Oil Bounty Act.* The operation of the 1917 Act is extended for a further year, and the rate of bounty on the first 3,500,000 gallons of oil produced is raised to 3½d. per gallon.

3. **Northern Territory.**—(i) *Mineral Oil and Coal Ordinance.* The Mineral Oil Ordinance of 1913 is repealed. Licences to search for mineral oil and coal may be granted, and provision is made for the granting of leases for mining for mineral oil and coal.

(ii) *Maintenance Orders (Facilities for Enforcement) Ordinance.* Provision is made for the enforcement in the Northern Territory of maintenance orders made in the United Kingdom, and power is given to make provisional orders of maintenance against persons resident in the United Kingdom.

(iii) *Trade Union Ordinance.* The Trade Union Act 1876 of South Australia is amended, a Registrar is appointed, and the method of cancellation of any certificate of registration of a Trade Union is prescribed.

4. **Federal Capital Territory.**—(i) *Industrial Board Ordinance.* An Industrial Board is constituted, consisting of three members with power to fix rates of pay, hours and other conditions of employment.

(ii) *Vine and Vegetation Diseases and Fruit Pests Ordinance.* The introduction of vines into the Territory may be prohibited, also the introduction of diseased plants, insects or fungus, and means may be adopted to deal with fruit pests and vegetation diseases.

5. **New South Wales.**—(i) *Income Tax Act.* The rate of tax for the year 1922 is increased by sixpence in the pound.

(ii) *Parliamentary Allowances and Salaries Act.* The salaries of members of Parliament are reduced from £875 to £600 per annum. The civil list is reduced from £21,245 to £20,300. The salaries of the Ministers and of the Speaker, of the President of the Legislative Council and of the Chairman of Committees are also reduced.

(iii) *Unauthorized Documents Act.* The use of forms for debt collecting, etc., resembling those issued by the Government is prohibited.

(iv) *Stamp Duties (Amendment) Act.* The amount of stamp duty payable on mortgages and instruments is changed.

(v) *Income Tax Act.* The rates of taxation for the year ending 30th June, 1922, and subsequent years are fixed.

(vi) *Income Tax Management (Amendment) Act.* Provision is made for the averaging of incomes derived from agricultural, dairying or pastoral pursuits.

(vii) *Encroachment of Buildings Act.* The method of settling compensation for encroachment is prescribed.

(viii) *Sydney Harbour Bridge Act.* The construction of a bridge across Sydney Harbour is authorized, and provision is made for the raising of the capital cost thereof.

(ix) *Industrial Arbitration (Amendment) Act.* Provision is made for the inclusion of agricultural and pastoral workers and for bringing them under the Act.

(x) *Workmen's Compensation (Lead Poisoning—Broken Hill) Act.* The provisions for the payment of compensation are extended to persons disabled by lead poisoning at Broken Hill, and a medical board is established.

(xi) *Public Service (Amendment) Act.* Provision is made for the appointment of salaries committees to determine the salaries of officers whose remuneration does not exceed £525 per annum.

(xii) *Liquor (Amendment) Act.* The fees for publicans', spirit merchants', colonial wine and other licences are altered and are now based on the amount of liquor sold. Numerous minor amendments are also made in the original Act.

6. **Victoria.**—(i) *Border Railways Act.* This Act ratifies and provides for carrying out an agreement between New South Wales and Victoria respecting the construction and operation of border railways and bridges.

(ii) *Vermin and Noxious Weeds Act.* This Act repeals the Thistle Act of 1915 and the provisions of the Vermin Destruction Act of 1915 relating to the destruction of vermin. Fresh provisions are made for the destruction of vermin and noxious weeds.

(iii) *The Congregational Union Incorporation Act.* The members of the religious body called Congregationalists or Independents in Victoria are incorporated in the Association called "The Congregational Union of Victoria".

(iv) *Friendly Societies Act.* The Act is amended with respect to Dividing Societies.

(v) *Rating on Unimproved Values Act.* The previous Acts of 1915 and 1920 are repealed, and the law relating to the optional rating by municipalities on the basis of the unimproved capital values of ratable property is consolidated and amended. Provision is also made for the taking of a poll of ratepayers on the question, if such is demanded.

(vi) *Juries Act.* The object of this amendment to the Juries Act 1915 is to prevent the names of persons who are called on to serve on the jury in criminal cases being made public prior to the trial, and in any criminal case the addresses of jurors are not to be called out in court. Restrictions are also placed on newspapers publishing names of empanelled jurors in criminal cases.

(vii) *Gaming Act.* The section of the Instruments Act relating to the recovery of securities given for an illegal consideration is repealed.

(viii) *Architects Registration Act.* The constitution of an Architects Registration Board is provided for, and all architects must be registered with such Board.

(ix) *Land Tax Act.* The land tax for the year 1923 is fixed at one half-penny on every pound of the unimproved value, plus 5 per cent.

(x) *Income Tax Act.* The rates of income tax for the financial year 1922–23 are fixed.

(xi) *Real Estate Agents Act.* Real estate agents must be licensed and deposit with their application for a licence a fidelity bond for £250.

(xii) *The Constitution Act Amendment Act.* Every member of the Legislative Council is entitled to receive reimbursement of his expenses at the rate of £200 per annum.

(xiii) *Milk Supply Act.* Further and better provision for the supply of milk is made, and the Dairy Supervision Act 1915 is amended. A milk supply committee may be appointed, and municipal councils may establish milk depots, etc.

(xiv) *Railways (Board of Discipline) Act.* A Board of Discipline is appointed for the purpose of hearing charges and appeals in connexion with employees in the railway service.

(xv) *Workers' Compensation Act.* The scope of the Act is extended to include workers, other than manual, earning up to £350 per annum. The maximum amount of compensation payable in case of death is increased to £600, and the minimum compensation for aged or infirm workers and for workers under 21 years of age is also increased.

(xvi) *Tourists' Resorts Act.* Tourists' resorts may be proclaimed and a committee appointed to act in an advisory capacity to the Minister of the Department administering the Act.

(xvii) *The North Melbourne Electric Tramways and Lighting Act.* The agreement for the sale of the North Melbourne Tramways and Lighting to the Government is ratified and the property vested partly in the Melbourne and Metropolitan Tramways Board and partly in the Electricity Commission.

(xviii) *Closer Settlement Act.* The Closer Settlement Act and the Discharged Soldiers' Settlement Act are amended in various particulars. Provision is made for the appointment of a Director of Land Settlement and conditions are prescribed under which land in mountainous areas may be taken up.

(xix) *Masseurs Registration Act.* Provision is made for the appointment of the Masseurs' Registration Board of Victoria, and for the registration of masseurs with such Board.

(xx) *Licensing Act.* Numerous amendments are made in the Act of 1915, and provision is made for the restoration of licences in districts in which prohibition has been carried.

(xxi) *Hospitals and Charities Act.* The similar Act of 1915 is repealed. The Charities Board of Victoria is to be appointed consisting of fourteen members nominated by various hospitals and charities organizations. The duties of the Board include the inspection of and inquiry into the administration and management of every subsidized institution or benevolent society, and the making of recommendations as to which institutions should be subsidized. The Governor may appoint an Inspector of Charities. All institutions and benevolent societies must be registered with the Board.

(xxii) *Metropolitan Town Planning Commission Act*. The Governor may appoint a Metropolitan Town Planning Commission consisting of nine members, of whom five are nominated by municipal councils and four are technical members. The duty of the Commission is to inquire into and report upon the present conditions and tendencies of urban development in the metropolitan area.

(xxiii) *Brands Act*. Inspectors of brands may be appointed, and any person may obtain the registration of a brand or ear-mark provided that such brand or ear-mark conforms to the form prescribed in the schedule to the Act.

(xxiv) *Fire Escapes (Melbourne) Act*. Under this Act, buildings in Melbourne which do not conform to the by-law of the City Council regarding fire escapes may be compelled to instal efficient fire escapes.

(xxv) *Factories and Shops Act*. The Act of 1915 is amended in several particulars and the duties of a wages board are redefined. The schedule of fees for the registration of factories and shops is also amended.

(xxvi) *Scaffolding Inspection Act*. The council of every municipality must appoint an inspector of scaffolding with power to see that the regulations respecting scaffolding are complied with.

7. **Queensland.**—(i) *Auctioneers and Commission Agents Act*. The Auctioneers Act of 1864 is repealed, and fresh provisions made regulating auctioneers, who are divided into two classes, according as they are holders of a general licence or of a district licence. Commission agents must also be licensed and furnish a fidelity bond to the amount of £500, and regulations may be made respecting them.

(ii) *Legislative Assembly Act Amendment Act*. Provision is made in certain cases for the voting by proxy of members of the Legislative Assembly who may be absent through illness.

(iii) *Officials in Parliament Act Amendment Act*. The number of Ministers is raised from eight to nine.

(iv) *Criminal Code Amendment Act*. Capital punishment is abolished.

(v) *Criminal Code Amendment Act (No. 2)*. Any property which has been offered or given as a bribe to a member of the Legislative Assembly must be forfeited to the Crown, whether such property is the property of the offender or of any other person.

(vi) *Agricultural Education Act*. A Board of Agricultural Education is to be created, and, upon the recommendation of such Board, agricultural schools or classes may be established.

(vii) *Health Acts Amendment Act*. Amendments are made in the Health Acts, especially in regard to drainage, the adulteration of food and drugs, the disinfection of houses, and venereal diseases. The sale of footwear is also regulated.

(viii) *Maternity Act*. This Act makes better provision for the establishment and maintenance of maternity hospitals and baby clinics.

(ix) *Income Tax Act Amendment Act*. Numerous amendments are made in the Act of 1902 and its amendments.

(x) *Unemployed Workers Insurance Act*. An Unemployment Council is to be constituted. An Unemployment Insurance Fund is created, constituted partly from contributions by workers and partly from contributions by employers of such workers and partly from moneys provided by Parliament. Power is given to direct employers to take steps to remedy unemployment, and labour farms may be established for persons who are normally unemployable.

(xi) *Land Acts Amendment Act*. Minor alterations are made in the Land Act, the Closer Settlement Act, and the Discharged Soldiers' Settlement Act. The last-named Act is amended so as to provide loans for the purchase of live stock, vehicles, seeds, tools of trade, etc.

(xii) *Land Tax Act Amendment Act*. The value of land which is exempted from taxation, when used by the owner personally, is raised from £300 to £1,500, and several minor alterations are also made in the Act.

(xiii) *Primary Producers' Organization Act*. The object of this Act is to promote the agricultural and rural industries by the organization of the primary producers of Queensland in a completely unified national organization, consisting of the Council of Agriculture, the district councils of agriculture, and the local producers' associations.

(xiv) *Primary Products Pools Act*. Provision is made for the constitution of Boards representing growers of specified commodities and to confer powers on a board with respect to the marketing of the commodity for which it was constituted.

(xv) *Public Service Act*. Previous Acts are repealed and the provisions thereof consolidated and amended.

(xvi) *Salaries Act*. The salaries of public servants are reduced by five per cent, but no salary below £300 per annum is reduced.

(xvii) *Sugar Works Act*. The construction, establishment, maintenance, management and control of sugar works by the State are authorized.

(xviii) *Irrigation Act*. Provision is made for the construction, maintenance, and management of works for the storage and supply of water for the purposes of irrigation and for the appointment of a Commissioner of Irrigation.

(xix) *Water Power Act*. Better provision is made for the utilization of water for the purpose of generating and providing electrical energy and water power, under the control of water power boards.

(xx) *Brisbane Tramways Trust Act*. The Brisbane Tramway Trust is constituted for the purpose of taking over and managing the Brisbane Tramways after they have been purchased by the Government.

8. South Australia.—(i) *Electoral Code Amendment Act*. Where a member of the Legislative Council or of the House of Assembly contests a seat in the Commonwealth Parliament, and fails to secure election, he retains his seat in the State Parliament.

(ii) *Partition Act Amendment Act*. The Partition Act of 1881 is amended in certain particulars.

(iii) *Judges' Salaries Act*. The salary of the Chief Justice is fixed at £2,500, and that of other Judges at £2,000 per annum.

(iv) *Maintenance Orders (Facilities for Enforcement) Act*. Provision is made for the enforcement in South Australia of maintenance orders made elsewhere and for making provisional orders against persons resident outside that State.

(v) *Chaff and Hay Act*. The former Acts relating to the sale of chaff and hay are repealed and fresh provisions are made for the prevention of adulteration of those commodities, and for the registration of dealers.

(vi) *Mining Act Further Amendment Act*. Various amendments are made, especially in regard to the rental of a mineral lease, and the amalgamation of leases.

(vii) *Municipal Corporations Act Further Amendment Act*. The Lodging House Acts are repealed. Numerous amendments are made in the Municipal Corporations Act. Private maternity homes and hospitals must be registered, and councils are empowered to construct tramways.

(viii) *Pastoral Act Further Amendment Act*. Among other amendments, special provision is made for the granting of a lease to the discoverer of water on an area on which such discoverer has a permit to search for water.

(ix) *Metropolitan Infectious Diseases Hospital Act*. Provision is made for the establishment, control, and management of a metropolitan infectious diseases hospital and for the appointment of a board.

(x) *Agricultural Graduates Land Settlement Act*. Land may be purchased for an agricultural graduate, repayment for which is to be made in instalments. Advances may also be made to such graduate up to £500 for the purpose of stock and plant and up to £1,000 for permanent improvements in mallee country.

(xi) *Mental Defectives Act Amendment Act*. Provision is made, *inter alia*, for the admission of voluntary boarders into mental hospitals.

(xii) *Phylloxera Act Amendment Act*. The Phylloxera Board is authorized to establish nurseries outside South Australia, and the schedule of districts is remodelled.

(xiii) *Charitable Trusts Procedure Act*. This Act enables the Supreme Court to hear and summarily decide on petition matters relating to the administration and management of trusts created for charitable purposes.

(xiv) *Shearers Accommodation Act*. Previous Acts are repealed and fresh provisions made.

(xv) *Irrigation Act*. The Irrigation and Reclaimed Lands Act and its amendments are repealed. The Act consolidates and amends those Acts and constitutes an Irrigation Commission to control, manage, and supervise irrigation, land reclamation and land settlement within irrigation areas, including the leasing of such land. The powers, duties, and functions of the Commission under other Acts are also defined.

9. **Western Australia.**—Particulars regarding the legislation passed in this State during 1922 will be found in the Appendix.

10. **Tasmania.**—(i) *Homes Act*. The definition of a person eligible is amended.

(ii) *Electoral Act*. The boundaries of five Assembly Divisions are altered.

(iii) *State Loans to Local Bodies Act*. Amendments are made in the terms and interest on loans. Provision is made for sinking funds and other matters.

(iv) *Second-hand Dealers Act*. All goods purchased must be kept unaltered for three days.

(v) *Children's Charter Amendment Act*. The establishment of Children's Courts is provided for.

(vi) *District Justices Act*. Justices of the Peace may be of either sex.

(vii) *Public Service Act*. All previous Acts are repealed and the provisions thereof consolidated and amended.

(viii) *Motor Vehicles Tax Act*. A new schedule of taxes on motor vehicles is prescribed.

(ix) *Stamp Duties Act*. The terms upon which an instrument may be stamped after execution are altered, and other amendments made.

CHAPTER IV.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **General.**—The construction and maintenance of roads, bridges and ferries are generally part of the functions of local authorities, but in New South Wales and South Australia, more especially in the large unincorporated areas, these duties are undertaken directly by the Government. In some States, moreover, a certain proportion of the roads and bridges are constructed and maintained by the Government, which, in addition, advances money for main roads to be expended by municipalities under the supervision of special Boards. Although roads, bridges and ferries constructed and maintained directly by Government do not properly come under the heading of "Local Government," they have been included in this chapter for the sake of convenience.

2. **Municipalities, Shires, etc.**—A description of the various systems of municipal government in the different States, and their development from the earliest date, was published in 1919 by the Commonwealth Bureau of Census and Statistics in a separate work entitled "Local Government in Australia." Limits of space preclude the incorporation of the information contained therein in the present issue of the Official Year Book.

3. **Water Supply and Sewerage.**—In the cities of Sydney, Melbourne and Brisbane, the control of water supply and sewerage is in the hands of special Boards, while in Adelaide and Perth, these services are under the direct supervision of Government Departments. In most of the other cities and towns, the municipal councils, or, in some cases, water trusts, are the controlling bodies, which either construct the works out of their own resources or take them over after they have been constructed by the Government.

4. **Harbours.**—The majority of the harbours in Australia are managed by Boards, the members of which are either elected by persons interested or appointed by the Government. In a few instances, however, they are directly controlled by the Government. Only those which are controlled by Boards are dealt with in the following pages.

5. **Fire Brigades.**—In all the States, the management of fire brigades is undertaken by Boards. The members of these Boards are usually elected by the councils of municipalities and insurance companies within the districts placed under their jurisdiction, together with one or more appointed by the Government. Occasionally volunteer or country fire brigades are represented.

§ 2. Government Roads, Bridges, Etc.

1. **New South Wales.**—(i) *General.* The control of all roads, bridges and ferries, with the exception of those proclaimed as "National" and of those in the unincorporated areas of the Western Division, which still remain under its jurisdiction, was transferred, in 1920, from the Public Works Department to local authorities. The Government has also adopted the policy of assisting municipal and shire councils to recondition certain main roads by doing the work in the first instance and recovering, in instalments, from the councils concerned one-half of the cost.

(ii) *Roads, Bridges and Ferries.* At the end of 1921, the "National" works consisted of 58 miles of roads, 283 bridges with a total length of 108,631 feet, and 23 ferries, while in the unincorporated areas of the Western Division there were 6,053 miles of roads (of which 213 miles were metalled or ballasted, 163 formed only, and 3,437 cleared only), 99 bridges of a total length of 13,602 feet, 340 culverts, and 6 ferries under the control of the Public Works Department.

(iii) *Expenditure on Roads, Bridges and Ferries.* The total Government expenditure on roads, bridges and ferries from 1857 to 1921-22 was £24,982,383. The following table shows the expenditure for each year from 1917-18 to 1921-22 :—

**ROADS, ETC.—EXPENDITURE BY PUBLIC WORKS DEPARTMENT,
NEW SOUTH WALES, 1917-18 TO 1921-22.**

Year ending 30th June.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Expenditure	74,459	88,591	116,034	163,121	542,205

During the year ended 30th June, 1922, a main roads vote of £171,232 was distributed among the municipalities and shires, a general oversight over the expenditure thereof being exercised by Departmental officers.

2. *Victoria.*—(a) *General.* A small sum is expended annually by the State Government on roads and bridges, and a considerable amount of loan money is advanced in each year to the Country Roads Board for the purpose of constructing and maintaining main and developmental roads, the amount so expended during the year ending 30th June, 1921, being £965,646. An annual payment of £50,000 is also made out of Consolidated Revenue to the Board for maintenance works.

(b) *Direct Expenditure by Government.* The following table shows the amounts of money expended directly by the Government on roads and bridges during the years 1917-1918 to 1921-22 :—

**ROADS AND BRIDGES—GOVERNMENT EXPENDITURE, VICTORIA,
1917-18 TO 1921-22.**

Year.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Expenditure	19,782	20,591	7,832	10,842	23,622

(c) *Country Roads Board.* The duties of this Board were given in some detail in the preceding number of the Year Book (*see* No. 15, p. 526).

The borrowing of a sum of £3,000,000 by the Government has been authorized for the purpose of making roads. One half of the amount expended on permanent works and maintenance must be refunded by the municipalities affected, six per cent. of the amount due in respect of permanent works being payable annually, and the cost of maintenance allocated to each municipality must be paid before the first of July in each year. A special rate, not exceeding six pence in the pound may be levied in any ward or riding of a municipality for the purpose of such repayment.

All registration fees, licence fees and fines under the Motor Car Act, all licence fees for unused roads and water frontages, and all registration fees and fines for traction-engines are credited to the Country Roads Board Fund. The total loan expenditure for permanent works to the 30th June, 1921, was £2,177,245. The following table gives the revenue and expenditure on permanent and maintenance works for the five years 1916-17 to 1920-21:—

**COUNTRY ROADS BOARD, VICTORIA—REVENUE AND EXPENDITURE,
1916-17 TO 1920-21.**

Year ended 30th June.	Revenue.					Expenditure.	
	Motor Registration and Licence Fees.	Unused Roads etc., Licence Fees.	Contributions by Municipalities.		Total.	Permanent Works.	Main-tenance.
			Permanent Works.	Main-tenance.			
	£	£	£	£	£	£	£
1917	44,746	24,358	23,527	..	96,707	226,603	130,537
1918	58,485	23,736	30,256	..	116,521	226,599	173,757
1919	67,666	22,374	29,841	82,453	261,655	284,734	179,133
1920	85,303	22,072	37,573	89,730	294,498	335,755	192,320
1921	98,135	21,441	50,036	90,335	342,865	271,869	221,395

(d) *Developmental Roads.* For the purpose of constructing and maintaining subsidiary or developmental roads, the Government may borrow the sum of £2,000,000. The work is carried out under the supervision of the Country Roads Board, and the State provides the whole of the money and makes provision out of State funds for liquidating the liability; the municipalities, however, are required to bear a proportion of the interest on the outlay during the period of the loan and to maintain the roads when constructed. The amount expended during the year ended 30th June, 1921 was £693,309, and the total expenditure to that date was £1,058,210.

3. *Queensland.*—Under the Main Roads Act of 1920, a Main Roads Board was constituted, consisting of three members appointed by the Governor in Council. The duties of this Board are to make the necessary surveys and investigations in order to determine what roads should be main roads and, under certain circumstances, to undertake the construction and maintenance of such roads. Before any road can be proclaimed a main road, the shire councils, through whose areas such road passes, have the right to lodge objections thereto, and the Board must consider such objections and may vary its decision. The whole of the money necessary for the construction and maintenance of main roads is provided from the Main Roads Fund at the Treasury, and the councils concerned must repay one-half the cost thereof over a period of 30 years, with interest. This fund is formed from (a) moneys appropriated by Parliament therefor, (b) taxes and fees on motor vehicles, traction engines and wheels of vehicles, (c) fees and rents for unused roads, (d) moneys received for the sale of timber, sand, etc., on any main road, and (e) all other moneys received or recovered by the Board. Wherever possible, the Board arranges with local authorities to undertake the survey and construction of works, but in most cases, owing to the dearth of trained engineers in the employ of councils, the Board has had to undertake most of the survey work and preparation of plans and a considerable portion of the construction. During the year ended 30th June, 1922, the receipts of the Board amounted to £110,945, including £60,000 from the Treasury Loan Fund and £49,188 from motor fees, and the disbursements to £40,063, including £9,540 expenditure on permanent works and £1,118 on maintenance of main roads. At that date, 1,210 miles of roads had been gazetted as main roads, 1,217 miles had been surveyed, and the estimated cost of works for which plans were in hand or completed, including bridges, was £95,592.

4. **South Australia.**—In the sparsely settled districts outside the incorporated areas, the roads and bridges are constructed and maintained by the Public Works Department, which expended thereon during the year ended 30th June, 1921, the sum of £29,997. During the same year, the Government expended £120,223 from loan funds on certain main roads. Under the Main Roads Act of 1922, the Government is authorized to borrow up to £300,000 for the purpose of reconstructing main roads and for acquiring quarries and working the same. A large amount of money is allocated annually to the municipal corporations and district councils solely for the construction and maintenance of main roads within their boundaries.

The Roads Improvement Act 1921 provides for the constitution of a Roads Advisory Board, consisting of three members of the Public Service appointed by the Governor. Main roads may be proclaimed. The duties of the Board are to advise the Minister as to the moneys which should be expended by each council on the construction, maintenance and keeping in repair of the main roads within its district, and the amount of money voted for main roads which should be allocated to each council. The Minister determines (a) the total amount of money to be expended by each council for such purposes during each financial year, (b) the amount to be allocated to each council, and (c) the amount to be spent by each council out of revenue, for which a council may declare a special rate not exceeding fourpence in the pound, but the amount under (c) must not exceed one-half the amount under (b). Should a council make default in carrying out the work prescribed, the Engineer for Roads and Bridges may undertake it, and half the amount of the cost thereof becomes a debt due by such council to the Minister.

5. **Western Australia.**—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State are under the control of municipalities and district road boards which are subsidized by the Government.

6. **Tasmania.**—(i) *Construction.* In Tasmania the cost of construction of roads and bridges is borne almost entirely by the central Government.

Up to the 30th June, 1922, the loan expenditure on these works was £3,776,066. In addition, half the proceeds of the sale of land has formed a Crown Lands Fund for the construction of roads to new holdings. Under this provision £658,616 has been expended. This fund has in recent years more than met the demands on it, and expenditure therefrom since 1918 has been limited to £10,000 annually, the balance being used for redemption of debt. The following table gives the total expenditure up to the 30th June, 1918, and the annual expenditure during the years 1918–19 to 1921–22 by the State on the construction of roads and bridges, together with the mileage of new roads and the number of new bridges built during those four years :—

**ROADS AND BRIDGES, TASMANIA—GOVERNMENT EXPENDITURE ON
CONSTRUCTION TO 30th JUNE, 1922.**

Period.				Expenditure.		New-road Mileage.		New Bridges.
				Loans.	Crown Lands Fund.	Cleared.	Metalled.	
				£	£	Miles.	Miles.	No.
Total to 30th June, 1918				3,403,644	632,116	..	..	..
1918-19				90,101	6,995	81	89	36
1919-20				81,940	6,563	67	68	17
1920-21				100,621	4,744	62	80	8
1921-22				99,760	8,198	69	73	27

(ii) *Maintenance.* The maintenance of roads and bridges is undertaken by the municipalities with some assistance from the central Government, chiefly by way of subsidy. Under the Aid to Road Rates Act, a sum of £11,000 is distributed annually among the municipalities, in proportion as the cost of maintenance falls on their resources. Under the Main Roads Maintenance Act 1918 a further sum of £5,000 was provided out of Consolidated Revenue, which, with the addition of the motor tax, less 5 per cent., and a contribution from municipalities, is expended on the upkeep of main roads. In 1921–22 the amount available for 1,049 miles of main road was £27,000. The work is carried out in most cases by municipalities, under the general direction of an Advisory Board, on which the Government, the municipalities, and the motorists are all represented. Further, the Repairs to Roads Act 1920 provides for loans for 15 years to municipalities for the purpose of re-making roads—half the loan is repaid in instalments by the local body and the remainder by the State Government. The Government also provides for the repair of the more important bridges, and for emergency work.

7. **Summary of Loan Expenditure on Roads and Bridges.**—Figures showing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of loan expenditure by the State Governments up to the 30th June, 1921 :—

**ROADS AND BRIDGES.—GOVERNMENT LOAN EXPENDITURE TO THE
30th JUNE, 1921.**

Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Total ..	1,854,775	3,531,678	931,775	1,929,966	412,552	3,676,396	12,337,142

The following table shows the annual expenditure from loans on roads and bridges by the central Governments in each State during the years 1916–17 to 1920–21 :—

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATES, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1916–17 ..	5,428	252,836	..	54,939	5,879	..	319,082
1917–18 ..	22,374	241,892	..	43,693	2,600	..	310,559
1918–19 ..	13,089	360,524	..	22,008	4,310	90,101	490,032
1919–20 ..	6,674	623,570	..	66,393	14,538	81,940	793,115
1920–21 ..	13,555	965,646	..	120,223	32,121	100,621	1,232,166

The two tables given above show only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction.

§ 3. Municipalities, Shires, Etc.

1. New South Wales.—(i) *General*. Practically the whole of the State, with the exception of the Western Division, has been divided into municipalities and shires, the total area incorporated at the end of 1921 being 183,985 square miles, of which 2,845 square miles are included in the former and 181,140 in the latter. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

(ii) *Municipalities*.—(a) *Summary*. The following table gives the number, area and population of municipalities together with the length of roads and the number of bridges and ferries therein for the years 1917 to 1921 :—

MUNICIPALITIES, NEW SOUTH WALES—SUMMARY, 1917 TO 1921.

Year.	No. of Municipalities.	Sydney and Suburbs.		Country.		Length of Roads.	Bridges.	Ferries.
		Area.	Population.	Area.	Population.			
1917	185	95,259	762,480	1,742,275	453,800	(a)	(a)	(a)
1918	184	95,259	777,140	1,710,675	463,500	10,214	929	12
1919	183	95,259	811,910	1,710,475	482,860	(a)	(a)	(a)
1920	185	95,259	881,594	1,725,875	525,264	(a)	(a)	(a)
1921	185	95,259	906,320	1,725,875	531,090	10,187	745	26

(a) Not available.

Of the 10,187 miles of roads, 4,474 were metalled, ballasted or gravelled, 1,912 formed only, and 2,162 cleared only, while 1,639 miles were natural surface.

(b) *Unimproved and Improved Values*. The following table gives a comparison of the unimproved and improved values for the years 1917 to 1921 inclusive :—

MUNICIPALITIES, NEW SOUTH WALES.—CAPITAL VALUES, 1917 TO 1921.

Year.	Sydney.	Suburbs.	Metropolitan.	Country.	Total.
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UNIMPROVED VALUE.

			£	£	£	£	£
1917	31,130,368	36,808,755	67,939,123	24,350,474	92,289,597
1918	31,880,295	38,176,261	70,056,556	24,629,668	94,686,224
1919	..	..	31,831,054	39,672,190	71,503,244	25,289,371	96,792,615
1920	..	..	33,077,620	46,847,825	79,925,445	29,060,263	108,985,708
1921	..	..	35,887,412	51,027,987	86,915,399	30,706,273	117,621,672

IMPROVED VALUE.

1917	..	..	81,976,260	101,493,562	183,469,822	62,055,080	245,524,902
1918	..	..	82,027,200	106,647,308	188,674,508	63,368,253	252,042,761
1919	..	..	82,808,760	111,686,717	194,495,477	66,059,272	260,554,749
1920	..	..	84,580,400	127,414,223	211,994,623	77,900,508	289,895,131
1921	..	..	99,647,060	141,632,450	241,279,510	88,922,248	330,201,758

(c) *Revenue and Expenditure.* The following table gives particulars of the revenue and expenditure of municipalities for the year ending 31st December, 1921, under various headings :—

MUNICIPALITIES, NEW SOUTH WALES.—REVENUE AND EXPENDITURE, 1921

Particulars.	Sydney.	Suburbs.	Country.	Total.
REVENUE.				
	£	£	£	£
General fund	2,068,153 (a)	1,373,092	939,857	2,312,949 (b)
Trading accounts		12,002	379,806	391,808 (b)
Special and local funds		28,375	262,392	290,767 (b)
Gross revenue	2,068,153	1,413,469	1,582,055	5,063,677

EXPENDITURE.				
	£	£	£	£
General fund	2,060,635 (a)	1,471,529	932,885	2,404,414 (b)
Trading accounts		13,673	330,221	343,894 (b)
Special and local funds		26,341	244,317	270,658 (b)
Gross expenditure	2,060,635	1,511,543	1,507,423	5,079,601

(a) Items of revenue and expenditure for the city of Sydney cannot be allocated to the different headings shown for municipalities. (b) Exclusive of Sydney.

The subjoined table shows the gross revenue and expenditure of all municipalities for the five years 1917 to 1921 :—

MUNICIPALITIES, NEW SOUTH WALES.—REVENUE AND EXPENDITURE, 1917 TO 1921.

Municipalities.	1917.	1918.	1919.	1920.	1921.
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GROSS REVENUE.					
	£	£	£	£	£
Sydney	1,161,406	1,263,170	1,483,810	1,724,858	2,068,153
Suburban	899,375	935,108	1,012,024	1,200,139	1,413,469
Country	1,064,483	1,141,795	1,271,005	1,357,065	1,582,055
Total	3,125,264	3,340,073	3,766,839	4,282,062	5,063,677

GROSS EXPENDITURE.					
	£	£	£	£	£
Sydney	1,228,187	1,246,130	1,454,277	1,747,972	2,060,635
Suburban	872,942	912,266	987,885	1,145,765	1,511,543
Country	968,099	1,043,633	1,228,553	1,293,564	1,507,423
Total	3,069,228	3,202,029	3,670,715	4,187,301	5,079,601

(d) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1921, is shown by the following statement of assets and liabilities. The amounts relating to each fund are not available for 1921, as heretofore, owing to the amalgamation of a number of special accounts with the general fund.

MUNICIPALITIES, NEW SOUTH WALES.—ASSETS AND LIABILITIES, 1921.

Particulars.	Sydney.	Suburbs.	Country.	Total
ASSETS.				
	£	£	£	£
Bank balance and cash ..	13,652,090 (a)	220,533	314,023	534,556 (b)
Outstanding rates ..		84,304	167,240	251,544 (b)
Sundry debtors ..		67,296	163,441	230,737 (b)
Stores and materials ..		24,578	71,527	96,105 (b)
Land, buildings, etc. ..		624,228	3,259,519	3,883,747 (b)
Other ..		39,161	61,715	100,876 (b)
Total ..	13,652,090	1,060,100	4,037,465	18,749,655
LIABILITIES.				
Loans, outstanding interest and sundry creditors ..	13,190,947 (a)	1,257,326	1,098,314	2,355,640 (b)
Debts due to Government and interest thereon ..		95,527	1,695,706	1,791,233 (b)
Bank overdrafts ..		129,292	90,930	220,222 (b)
Other ..		12,217	93,201	105,418 (b)
	13,190,947	1,494,362	2,978,151	17,663,460

(a) Particulars for the city of Sydney cannot be allocated to the different headings shown for municipalities. (b) Exclusive of Sydney.

(iii) *Shires.*—(a) *Summary.* The following table gives the number, area, population, and unimproved capital value of shires, together with the length of the roads, and the number of bridges and ferries therein. It is not possible to give the improved capital value or the assessed annual value, as shires are not compelled to make these valuations.

SHIRES, NEW SOUTH WALES.—SUMMARY, 1917 TO 1921.

Year.	No. of Shires.	Area.	Population.	Unimproved Capital Value.	Length of Roads.	Bridges.	Ferries.
	No.	sq. miles.	No.	£	miles.	No.	No.
1917 ..	136	180,658	658,880	107,695,315	(a)	(a)	(a)
1918 ..	136	180,658	673,860	109,133,215	83,309	3,567	98
1919 ..	136	180,708	692,230	110,881,306	(a)	(a)	(a)
1920 ..	136	181,140	670,123	120,872,326	(a)	(a)	(a)
1921 ..	136	181,140	676,130	130,834,456	85,458	3,627	175

(a) Not available.

Of the 85,458 miles of roads, 17,216 miles were metalled or ballasted, 12,200 formed only, and 26,538 cleared only, the balance being natural surface.

(b) *Revenue and Expenditure.* The revenue and expenditure of shires for the years 1917 to 1921 are shown in the following table. Included in the receipts for 1921 are Government grants amounting to £152,753:—

SHIRES, NEW SOUTH WALES.—REVENUE AND EXPENDITURE. 1917 TO 1921.

Particulars.	1917.	1918.	1919	1920.	1921.
REVENUE.					
<i>General Fund—</i>	£	£	£	£	£
General rates (including interest)	672,473	710,983	742,026	825,781	968,886
Government endowment	151,446	162,188	153,234	156,429	178,420
Public works	167,696	157,737	230,673	196,045	188,533
Health administration	3,987	3,865	13,731	79,410	84,014
Public services	10,682	11,487	12,481	14,630	15,540
Shire property	14,343	14,258	15,539	13,456	16,145
Miscellaneous	7,303	7,427	7,192	12,125	8,939
<i>Special and Local Funds</i>	84,374	93,101	114,885	57,540	87,124
Total revenue	1,112,304	1,161,046	1,289,761	1,355,416	1,547,601
EXPENDITURE.					
<i>General Fund—</i>					
Administrative expenses	100,649	99,391	115,657	146,762	140,300
Public works	901,730	916,351	1,013,337	994,731	1,187,349
Health administration	9,149	9,292	26,237	84,282	89,344
Public services	18,256	19,370	21,293	26,239	33,782
Shire property	16,211	16,884	17,037	14,935	18,721
Miscellaneous	15,912	15,526	16,034	8,589	9,418
<i>Special, Local, and Loan Funds</i>	78,819	86,905	98,403	50,210	78,474
Total expenditure	1,140,726	1,163,719	1,307,998	1,325,748	1,557,388

(c) *Assets and Liabilities.* The finances of the shires at the end of the year 1921 showed an excess of assets of £393,372. The following table gives particulars of assets and liabilities as at the 31st December, 1921 :—

SHIRES, NEW SOUTH WALES.—ASSETS AND LIABILITIES, 1921.

Assets.	Amount.	Liabilities.	Amount.
	£		£
Bank balances and cash	157,643	Loans outstanding, interest and	
Outstanding rates	107,234	sundry creditors	213,543
Sundry debtors	33,587	Bank overdrafts	89,008
Stores and materials	25,442	Other	51,722
Land, buildings, etc.	421,009		
Other	2,730		
Total	747,645	Total	354,273

2. *Victoria.*—(i) *General.* Local Government is established throughout the State (with the exception of French Island), the various divisions being termed cities, towns, boroughs, or shires. Melbourne and Geelong were incorporated under special statutes prior to the establishment of a general system of local government, and except in a few details are not subject to the provisions of the Local Government Act.

In addition to the endowment of £50,000, the municipalities received from the Government during the financial year 1921–22 a sum of £66,312 out of the Licensing

Fund as the equivalent for (a) fees for licences, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1915.

The financial years of the cities of Melbourne and Geelong end on the 31st December and the 31st August respectively ; those of all other municipalities on the 30th September.

(ii) *Municipalities.*—(a) *Summary.* The following table shows the number of cities, towns, boroughs, and shires, with estimated population, number of ratepayers and dwellings, and value of ratable property for the years 1918 to 1922 inclusive :—

MUNICIPALITIES, VICTORIA.—SUMMARY, 1918 TO 1922.

Year ending 30th September.	Number of Municipal- ities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Ratable Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGHES.						
	No.	No.	No.	No.	£	£
1918	52	844,970	219,076	192,724	158,777,843	8,912,303
1919	52	859,470	224,757	196,815	164,306,704	9,227,807
1920	52	877,880	228,518	199,147	172,838,636	9,687,320
1921	55	886,030	237,037	203,446	193,947,624	10,864,184
1922	53	914,371 ^a	245,589	204,144 ^a	210,501,055	11,869,636
SHIRES.						
	No.	No.	No.	No.	£	£
1918	139	613,380	186,551	141,082	172,558,872	8,735,794
1919	138	622,260	188,032	141,600	176,297,529	8,922,859
1920	138	628,420	188,892	141,918	184,599,186	9,340,172
1921	138	628,970	198,801	144,270	205,555,121	10,350,524
1922	139	610,987 ^a	201,956	141,842 ^a	215,984,328	10,875,948

(a) Census figures.

(b) *Revenue and Expenditure.* The following table shows the revenue from various sources, and the expenditure under various heads, exclusive of loan revenue and expenditure, of municipalities during the years 1917 to 1921 :—

MUNICIPALITIES, VICTORIA.—REVENUE AND EXPENDITURE, 1917 TO 1921.

Items.		1917.	1918.	1919.	1920.	1921.
REVENUE.						
		£	£	£	£	£
Taxation	Rates	1,395,723	1,462,640	1,560,968	1,750,778	2,083,931
	Licences	108,651	109,916	136,517	135,383	126,952
	Dog fees	20,883	21,481	21,074	22,575	23,682
	Market and weigh- bridge dues ..	67,726	71,737	85,240	87,845	91,448
Government endowments and grants		68,364	62,460	96,429	74,563	65,581
Contributions for streets, etc.		54,620	63,910	93,900	73,182	84,936
Sanitary charges		96,484	101,791	101,996	116,096	133,244
Rents		62,953	65,821	69,845	85,517	92,717
Other sources		487,962	566,788	714,156	879,024	890,625
Total		2,363,366	2,526,544	2,880,125	3,224,963	3,593,116

MUNICIPALITIES, VICTORIA.—REVENUE AND EXPENDITURE, 1917 TO 1921—*continued.*

Items.	1917.	1918.	1919.	1920.	1921.
EXPENDITURE.					
Salaries, etc.	£ 210,034	£ 214,797	£ 226,692	£ 246,851	£ 284,158
Sanitary work, street cleaning, etc.	243,774	244,984	248,956	306,775	345,834
Lighting	97,685	98,511	100,679	102,945	115,968
Fire brigades' contributions	33,939	32,786	35,120	39,637	46,512
Public works { Construction	200,151	232,977	294,874	208,326	238,165
{ Maintenance	897,136	1,046,474	1,152,247	1,385,347	1,683,619
Formation of private streets, etc.	63,499	75,474	111,125	82,746	130,125
Redemption of loans	112,020	124,797	137,688	128,664	133,786
Interest on loans	274,113	277,435	257,057	264,147	276,065
Charities	20,350	19,977	21,103	25,031	29,468
Other expenditure	186,310	178,043	332,347	313,650	315,085
Total	2,339,011	2,546,255	2,917,888	3,104,119	3,598,785

(c) *Assets and Liabilities.* The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shows the amount of municipal assets and liabilities for the years 1917 to 1921 :—

MUNICIPALITIES, VICTORIA.—ASSETS AND LIABILITIES, 1917 TO 1921.

Items.	1917.	1918.	1919.	1920.	1921.
ASSETS.					
MUNICIPAL FUND—	£	£	£	£	£
Uncollected rates	138,617	132,217	133,585	133,573	158,301
Other assets	442,388	427,046	550,283	483,724	591,508
LOAN FUND—					
(a) Sinking funds—					
Amount at credit	745,784	596,550	465,132	489,332	523,834
Arrears due	1,732	5,054	1,093	3,098	483
(b) Unexpended balances	286,206	238,906	204,761	221,405	331,561
PROPERTY—					
Buildings, markets, etc. ..	3,848,320	3,871,232	3,938,068	4,077,892	4,457,527
Waterworks	252,069	268,815	271,581	270,147	256,169
Gasworks	109,215	110,819	114,505	117,704	123,454
Total	5,824,331	5,650,639	5,679,008	5,796,875	6,442,837
LIABILITIES.					
MUNICIPAL FUND—					
Arrears due sinking funds	1,732	5,054	1,093	3,098	483
Overdue interest	24,425	6,920	6,611	7,091	5,379
Bank overdrafts	233,160	317,410	484,785	442,326	542,462
Other liabilities	233,189	269,947	280,475	281,675	352,518
LOAN FUND—					
Loans outstanding	6,030,343	5,764,050	5,041,429	5,192,069	5,595,614
Due on loan contracts	42,428	47,145	129,192	220,188	158,009
Due on current contracts	98,538	78,115	64,037	85,368	102,191
Total	6,663,815	6,488,641	6,007,622	6,231,815	6,756,656

3. **Queensland.**—(i) *General.* The whole of the State is incorporated into cities, towns, and shires under the Local Authorities Act of 1902 and its amendments.

(ii) *Municipalities.* (a) *Summary.* The following table gives particulars of the area, population, number of inhabited dwellings, and assets and liabilities of cities and towns and of shires for the years 1917 to 1921 :—

MUNICIPALITIES, QUEENSLAND.—SUMMARY, 1917 TO 1921.

Year.	No.	Area.	Popula- tion.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.	
							Govern- ment Loans.	Total.

CITIES AND TOWNS.

CITIES AND TOWNS.									
			sq. miles.	No.	No.	£	£	£	£
1917	..	35	406	320,450	62,839	16,771,990	1,829,543	261,385	1,478,978
1918	..	36	507	330,272	65,588	17,436,371	1,988,957	270,820	1,599,025
1919	..	35	510	346,019	66,879	17,648,597	2,037,948	304,204	1,667,595
1920	..	35	510	330,044	69,340	19,066,071	2,161,774	457,170	1,867,186
1921	..	36	522	339,420	71,257	19,350,707	2,579,726	506,131	2,081,724

SHIRES.

1917	..	139	669,488	409,845	88,437	45,276,512	567,438	181,862	306,294
1918	..	137	669,387	411,278	88,384	45,553,989	594,828	173,024	352,819
1919	..	136	669,384	425,855	92,030	46,259,148	625,883	191,551	398,272
1920	..	135	669,384	422,683	95,173	47,259,059	723,871	299,361	513,623
1921	..	134	669,372	423,857	99,364	49,051,635	800,451	338,681	620,180

(b) *Revenue and Expenditure.* The following table shows the revenue and expenditure (including loan moneys) of cities and towns, and of shires for each year from 1917 to 1921 :—

**MUNICIPALITIES, QUEENSLAND.—REVENUE AND EXPENDITURE,
1917 TO 1921.**

Year.	Revenue.			Expenditure.			
	Rates.	Govern- ment Subsidies.	Total.	Public Works.	Loan Redemp- tion.	Office Expenses and Salaries.	Total.

CITIES AND TOWNS.

		£	£	£	£	£	£	£
1917	..	495,510	30,012	622,481	475,689	24,062	56,179	648,228
1918	..	535,124	16,937	655,538	455,824	21,916	61,731	680,837
1919	..	612,476	45,833	798,473	577,993	20,925	68,585	860,958
1920	..	700,321	180,110	1,024,834	774,969	30,234	76,703	1,074,648
1921	..	791,259	94,453	1,025,504	842,567	32,696	92,194	1,180,420

SHIRES.

1917	..	485,375	16,138	572,688	395,687	12,250	86,112	555,264
1918	..	506,447	23,448	599,042	502,390	13,864	89,387	666,893
1919	..	538,769	41,000	690,476	507,506	18,080	97,047	718,018
1920	..	616,025	123,554	860,043	618,287	18,136	110,603	831,807
1921	..	666,951	86,237	844,834	671,997	22,732	134,380	925,953

4. **South Australia.**—(i) *General.* A large proportion of South Australia is unincorporated, the balance being under municipal corporations in the larger cities and towns, and district councils in outside areas. These bodies are subsidized by Government, and special grants allocated on the recommendation of the Roads Advisory Board are given for the maintenance and construction of main roads.

(ii) *Local Authorities.* (a) *Summary.* During the past five years the number of corporations and district councils has remained unchanged, the total being 184, of which 10 corporations and 14 district councils are in the metropolitan area, and 24 corporations and 136 district councils in outside areas. According to the latest available information, there are 956 miles of roads under the control of corporations and 42,438 miles under the control of district councils, and of these totals, 10 miles are wood-blocked and 10,529 miles macadamized. The following table gives the area, population, number of occupied dwellings, capital and assessment values and outstanding loans for corporations and district councils separately for the years 1917 to 1921:—

LOCAL AUTHORITIES, SOUTH AUSTRALIA.—SUMMARY, 1917 TO 1921.

Year.	Area.	Estimated Population.	Occupied Dwellings.	Capital Value.	Assessment Value.	Outstanding Loans.
MUNICIPAL CORPORATIONS.						
	Acres.	No.	No.	£	£	£
1917	53,226	195,809	44,311	39,799,949	2,354,649	354,021
1918	53,287	202,328	44,768	41,765,761	2,103,195	348,744
1919	53,949	218,932	45,814	42,401,746	2,337,394	343,926
1920	53,949	208,022	45,674	44,106,632	2,300,858	343,643
1921	53,959	214,730	46,782	47,980,109	2,421,920	382,293
DISTRICT COUNCILS.						
1917	29,620,681	237,323	55,698	54,605,364	2,704,374	17,895
1918	29,392,214	236,550	56,529	56,334,777	2,767,309	18,007
1919	29,602,382	260,409	57,127	57,503,456	2,829,198	23,836
1920	29,602,382	259,096	57,548	60,184,690	2,938,336	35,797
1921	29,605,269	264,712	57,630	63,510,162	3,160,976	38,131

(b) *Revenue and Expenditure.* The next table gives the revenue and expenditure of corporations and district councils for the years 1917 to 1921, showing in separate columns the receipts and expenditure on main roads. The financial year of municipal corporations ends on the 30th November and that of district councils on the 30th June.

LOCAL AUTHORITIES, SOUTH AUSTRALIA.—REVENUE AND EXPENDITURE, 1917 TO 1921.

Local Government (exclusive of Government Grants Account).							Government Grants Account (Main Roads).	
Year.	Revenue.			Expenditure.			Revenue.	Expenditure.
	Rates.	Subsidies.	Total.	Roads.	Other Public Works.	Total.		
MUNICIPAL CORPORATIONS.								
1917 ..	£ 189,594	£ 24,084	£ 291,195	£ 96,058	£ 103,474	£ 289,235	£ 15,787	£ 14,045
1918 ..	194,497	26,821	297,907	103,640	102,482	296,590	13,033	14,640
1919 ..	215,605	25,280	334,092	114,102	140,457	340,172	14,734	15,408
1920 ..	233,645	27,347	364,200	115,013	163,260	379,709	16,703	17,113
1921 ..	279,992	29,094	420,060	137,129	194,966	444,782	23,927	21,559
DISTRICT COUNCILS.								
1917 ..	155,677	36,674	222,494	126,714	35,172	205,079	111,567	94,299
1918 ..	162,718	38,298	233,107	165,499	29,235	250,610	126,865	149,038
1919 ..	167,161	38,555	249,622	176,056	30,896	270,108	120,790	129,967
1920 ..	180,414	37,730	298,953	179,802	52,891	310,676	128,345	114,891
1921 ..	212,801	43,316	315,166	189,332	40,048	318,614	208,608	180,891

5. **Western Australia.**—(i) *General.* In this State there are three forms of local authorities, namely:—(a) municipalities, (b) district road boards, and (c) local boards of health, the two former covering the whole of the State. Local boards of health are of three descriptions, (a) municipal, the members being the same as those of the municipal council of the municipality in which each is situated, (b) those under the control of road boards, and (c) those not under the control of road boards or municipalities. Several of the two latter are inactive. The financial year of municipalities and municipal boards of health terminates on the 31st October, and that of road boards and other local boards of health on the 30th June.

(ii) *Municipalities.* (a) *Summary.* The following table gives the number of municipalities, their area, population, number of dwelling houses, capital value (including improvements), annual value, and length of roads and streets, for the years 1918 to 1922. The figures for 1921 include those for one municipality which was dissolved on the 1st July, 1921, and for the population and number of dwellings in 1920 and 1921, the census-figures for 4th April, 1921, are given.

MUNICIPALITIES, WESTERN AUSTRALIA.—SUMMARY, 1918 TO 1922.

Year ended 31st Oct.—	Municipalities.	Area.	Population.	Dwelling Houses.	Valuation of Ratable Property.		Length of Roads and Streets.
					Capital Value.	Annual Value.	
	No.	Acres.	No.	No.	£	£	Miles.
1918 ..	25	58,070	148,431	33,789	26,077,875	1,509,736	1,120
1919 ..	23	60,911	151,575	33,626	26,172,435	1,506,691	1,118
1920 ..	23	60,911	166,222	35,492	26,280,406	1,550,134	1,135
1921 ..	22	60,911	166,222	35,492	29,947,232	1,673,545	1,140
1922 ..	21	58,981	162,561	34,537	29,492,571	1,710,389	992

(b) *Revenue and Expenditure.* The following table gives the revenue and expenditure of municipalities during the years 1918 to 1922:—

MUNICIPALITIES, WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE, 1918 TO 1922.

Year ended the 31st October—	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1918 ..	171,315	1,870	374,992	548,177	75,086	135,617	327,784	538,487
1919 ..	177,408	3,595	377,421	558,424	71,907	135,448	351,365	558,720
1920 ..	190,171	1,142	471,859	663,172	95,194	147,396	423,233	665,823
1921 ..	250,356	710	531,589	782,655	132,011	156,123	461,547	749,681
1922 ..	263,008	300	571,394	834,702	180,537	173,038	493,635	847,210

(c) *Assets and Liabilities.* The following table shows the assets and liabilities of municipalities at the 31st October in each financial year 1918 to 1922:—

MUNICIPALITIES, WESTERN AUSTRALIA.—ASSETS AND LIABILITIES, 1918 TO 1922.

Year ended the 31st October—	Assets.				Liabilities.	
	Balance in Hand.	Value of Property.	Accrued Sinking Funds.	Total.	Outstanding Debts and Bonds.	Total.
	£	£	£	£	£	£
1918 ..	35,016	1,440,479	335,459	1,907,272	1,753,316	1,825,056
1919 ..	41,806	1,426,270	372,168	1,967,776	1,738,568	1,823,929
1920 ..	36,087	1,456,109	385,692	2,011,498	1,745,908	1,836,596
1921 ..	64,687	1,514,671	409,879	2,089,501	1,782,471	1,890,307
1922 ..	45,461	1,533,276	412,578	2,100,799	1,767,562	1,857,490

(iii) *District Road Boards. (a) Summary.* The following table shows the number of road districts, their area, approximate unimproved value, length of roads in existence, assets and liabilities and outstanding loans, for the years 1917 to 1921. The unimproved values given are only approximate, allowance being made for three districts for which only the annual values are available. The population at the date of the census of 4th April, 1921, was 160,970, and the number of dwellings 41,662.

DISTRICT ROAD BOARDS, WESTERN AUSTRALIA.—SUMMARY, 1917 TO 1921.

Year ended 30th June—	Number of Road Districts.	Area.	Unimproved Capital Value (Approximate).	Length of Roads in Existence.	Assets.	Liabilities.	Out- standing Loans.
	No.	sq. miles.	£	miles.	£	£	£
1917 ..	117	957,828	14,507,000	29,942	256,245	137,994	101,070
1918 ..	116	975,830	14,427,000	31,018	265,033	149,127	107,155
1919 ..	118	975,820	14,435,000	33,669	272,441	173,002	120,887
1920 ..	118	975,820	14,553,000	34,631	280,066	191,823	140,185
1921 ..	119	975,820	14,547,000	36,506	307,521	219,660	154,411

(b) *Revenue and Expenditure.* The revenue and expenditure of district road boards are shown in the following table for the years 1917 to 1921 :—

DISTRICT ROAD BOARDS, WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE, 1917 TO 1921.

Year ended 30th June—	Revenue.				Expenditure.			
	Rates.	Govern- ment Grants.	Other.	Total.	Adminis- tration.	Works.	Other.	Total.
	£	£	£	£	£	£	£	£
1917 ..	113,686	30,226	55,383	199,295	26,335	126,316	36,526	189,177
1918 ..	116,245	32,594	46,187	195,026	27,969	139,514	38,682	206,165
1919 ..	118,144	27,692	53,748	199,584	29,591	132,276	42,245	204,112
1920 ..	135,644	53,234	68,902	257,780	31,722	152,172	59,471	243,365
1921 ..	149,904	39,172	85,659	274,735	36,891	179,317	69,008	285,216

(iv) *Local Boards of Health. (a) General.* On the 31st October, 1921, there were twenty-three local boards of health within municipalities, and on the 30th June, 1921, seventy-three under control of road boards, and thirty extra-municipal boards. Of the latter seventy-three, four under the control of road boards and ten extra-municipal boards were inactive during the year.

(b) *Finances.* The following table shows the number of boards, their revenue and expenditure, and the assets and liabilities of such as were active from 1917 to 1921. As already stated, the financial year of municipal boards ends on the 31st October and that of other boards on the 30th June.

LOCAL BOARDS OF HEALTH, WESTERN AUSTRALIA.—FINANCES, 1917 TO 1921.

Year.	Number.	Revenue.			Expenditure.		Assets.	Liabilities.
		Rates.	Sanitary Charges.	Total.	Sanitary Service.	Total.		
		£	£	£	£	£		
1917..	121	42,967	52,392	99,455	67,830	98,886	77,695	11,481
1918..	123	41,358	51,000	97,741	66,652	99,240	77,159	10,857
1919..	120	40,781	53,113	99,955	74,390	111,360	85,614	19,915
1920..	124	49,012	52,775	123,645	82,856	122,575	78,938	16,944
1921..	126	57,194	63,484	133,021	89,709	131,400	83,875	20,872

6. *Tasmania.*—(i) *General.* The whole State, with the exception of the cities of Hobart and Launceston, which were incorporated under separate Acts, is divided into municipal districts.

(ii) *Municipalities.* (a) *Summary.* The following table gives the number of municipalities, valuations, outstanding loans and length of roads for the year 1917 to 1921. The latest available figures for inhabited dwellings is for the year 1921, when the number was 45,950.

MUNICIPALITIES, TASMANIA.—SUMMARY, 1917 TO 1921.

Year.		Number of Municipalities.	Valuations.			Outstanding Loans.	Length of Roads.
			Annual Value.	Unimproved Value.	Total Capital Value.		
		No.	£	£	£	£	Miles.
1917	..	50	1,769,443	17,868,274	35,447,336	627,053	11,419
1918	..	50	1,787,234	18,363,948	36,232,654	708,158	11,395
1919	..	50	1,872,336	18,650,310	37,121,328	1,929,651	11,395
1920	..	49	1,934,790	19,334,867	38,736,226	1,983,513	11,639
1921	..	49	2,119,136	20,438,383	41,549,299	2,234,255	11,741

(b) *Revenue and Expenditure.* The following table gives the revenue and expenditure of all municipalities for the years 1917 to 1921 :—

MUNICIPALITIES, TASMANIA.—REVENUE AND EXPENDITURE, 1917 TO 1921.

Year.	Revenue.			Expenditure.			
	Rates.	Government Grants.	Total.	Administration.	Works and Services.	Interest and Sinking Fund.	Total.
	£	£	£	£	£	£	£
1917	202,119	18,527	470,402	38,923	345,500	86,291	487,615
1918	216,232	22,266	557,009	40,501	319,026	165,439	558,939
1919	240,661	33,967	578,886	39,338	398,101	125,240	585,491
1920	255,432	29,072	757,060	45,931	420,110	289,250	770,060
1921	303,625	28,239	888,017	60,377	453,774	120,034	657,412

7. *Northern Territory.*—(i) *Municipality of Darwin.* The following particulars relate to the year 1921–22 :—Area 2,024 acres, population 1,000, number of occupied dwellings 228, and of other buildings 130. Revenue from general rates £2,826, from Government grants £1,560, total £4,386 ; expenditure £5,917.

(ii) *Bagot Road District.* During the year 1921–22 the receipts amounted to £235, and the expenditure to £4, leaving (with a balance of £275 brought forward from the previous year) a balance in hand of £506.

§ 4. Summary of Municipal Finance.

1. *General.* In the preceding parts of this chapter certain particulars have been given regarding local authorities in each individual State. In this paragraph comparative figures are given for each State regarding the financial operations of the local governing bodies referred to in § 3. The particulars in the next two tables refer to financial years as follows :—New South Wales : calendar year 1921. Victoria : 30th September, 1921, except Melbourne, 31st December, and Geelong, 31st August, 1921. Queensland : calendar year 1921. South Australia : Corporations, 30th November, and district councils, 30th June, 1921. Western Australia : Municipalities, 31st October, 1921, district road boards, 30th June, 1921. Tasmania : calendar year 1921.

2. **Number, Revenue, Expenditure, and Valuation of Local Authorities.**—The following table shows the number, revenue, expenditure, and valuation of local authorities in each State and in Australia during the years indicated above. It should be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

LOCAL AUTHORITIES IN EACH STATE.—FINANCIAL SUMMARY, 1921.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
No. of local authorities ..	321	192	170	184	141	49	1,057
RECEIPTS.							
Rates—	£	£	£	£	£	£	£
General ..	6,611,278	2,083,931	1,009,783	352,368	366,628	96,198	14,987,900
Other ..		375,326	448,427	140,425	154,310	207,427	
Government grants		65,581	180,690	289,949	39,882	28,139	
Loans and other sources ..		1,068,278	231,438	185,019	496,570	556,253	
Total ..	6,611,278	3,593,116	1,870,338	967,761	1,057,390	888,017	14,987,900

EXPENDITURE.							
Works, services, etc.	6,636,989	2,513,711	1,514,564	757,877	663,002	453,774	15,000,302
Interest on loans and overdrafts		276,065	39,334	17,207	90,086	101,546	
Redemptions, sinking funds, etc. ..		133,786	55,428	17,865	79,283	18,488	
Administration ..		284,158	226,574	91,300	96,987	60,377	
Other ..		391,065	270,473	81,597	105,539	23,227	
Total ..	6,636,989	3,598,785	2,106,373	965,846	1,034,897	657,412	15,000,302

VALUATIONS.							
Capital value of property ..	a248,456,128	426,485,383	68,402,342	111,490,271	c44,494,232	41,549,299	..
Annual value of property ..	(b)	22,745,584	(b)	5,582,896	d1,673,545	2,119,136	..

(a) Unimproved capital value of all ratable property. (b) Not available. (c) The valuation of road districts is the unimproved capital value. (d) Excluding district road boards.

3. **Local Government Loans, 1921.**—The following table shows the amount of loans raised by local authorities during the year 1921, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans redeemed during 1921 :—

LOCAL AUTHORITIES.—LOANS, 1921.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
Loans raised during year ..	£ 2,111,962	£ 572,851	£ 221,901	£ 58,070	£ 55,418	£ 254,099	£ 3,274,301
Loans current at end of year	11,743,498	5,595,614	1,963,492	420,424	1,553,957	2,234,255	23,511,240
Annual liability on account of interest	506,875	(b) 276,000	87,978	20,050	90,522	119,297	1,100,722
Total sinking fund at end of year ..	1,069,365	524,317	(a)	25,621	382,925	239,159	(a)
Amount of loans redeemed during year ..	(a)	133,786	55,428	17,837	47,852	188,769	(a)

(a) Not available. (b) Approximate.

§ 5. Water Supply, Sewerage, and Drainage.

1. **New South Wales.**—(i) *General.* In Sydney and its suburbs, the water supply and sewerage systems are controlled by the Metropolitan Board of Water Supply and Sewerage, and in Newcastle and its suburbs by the Hunter District Water Supply and Sewerage Board. In country districts, both waterworks and sewerage works are constructed by the Public Works Department, and, when completed, handed over to the municipalities affected, by which the cost must be repaid.

(ii) *Metropolitan Waterworks.* (a) *General.* During the year ended 30th June, 1922, the mileage of water mains laid was 118 miles, as against 128 miles in the preceding year, making the total length in sizes from 3 inches to 72 inches in diameter, 2,999 miles. The most important work completed was the pumping station at Ryde, which was erected for the purpose of maintaining an adequate supply of water for the whole of the North Sydney suburbs. The 36-in. main from Potts Hill through the western suburbs to Leichhardt was also finished and brought into commission. By raising it 20 feet, the storage capacity of the impounding dam for Manly was increased from 90 million to 428 million gallons.

(b) *Water Supplied, etc.* The following table gives the number of houses and estimated population supplied, and other details for the years 1918 to 1922 :—

WATERWORKS, SYDNEY.—WATER SUPPLIED, 1918 TO 1922.

Year ended 30th June—	Number of Houses. Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population.	
	No.	No.	1,000 Gallons.	1,000 Gallons.	Gallons.	Gallons.	Miles.
1918 ..	196,685	993,425	41,358	15,096,030	206	41.63	98
1919 ..	204,308	1,021,540	45,557	16,628,342	223	44.59	106
1920 ..	212,046	1,060,230	48,021	17,527,753	226	45.29	142
1921 ..	221,886	1,109,430	48,496	17,701,000	218	43.71	128
1922 ..	229,274	1,146,370	51,002	18,616,000	222	44.49	118

(c) *Finances.* The next table gives details of the finances for the years 1918 to 1922 :—

WATERWORKS, SYDNEY.—FINANCES, 1918 TO 1922.

Year ended 30th June—	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percentage of Working Expenses on Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Net Profit after Paying Working Expenses and Interest.
	£	£	£	%	%	£	£
1918 ..	523,979	195,448	8,472,700	37.30	6.18	343,716	— 15,185
1919 ..	627,288	219,322	8,900,391	34.96	7.04	377,885	30,081
1920 ..	664,975	291,618	9,584,723	43.85	6.93	433,170	— 59,813
1921 ..	855,751	347,298	10,323,252	40.58	8.28	473,889	34,564
1922 ..	923,798	376,203	11,130,857	40.72	8.30	543,164	4,431

NOTE.—The minus sign (—) signifies loss.

(iii) *Metropolitan Sewerage Systems. (a) General.* In addition to the usual progress made in connecting additional houses and constructing new sewers, six tanks have been erected at the North Sydney outfall works for the treatment of sewage by the activated sludge process in substitution for septic tanks, and 707,721,000 gallons of sewage were treated by the new process.

(b) *Houses Drained, Population Served, Length of Sewers, etc.* The subjoined table gives the number of houses drained, the estimated population served, the length of sewers and stormwater drains, the length of ventilating shafts erected, and the length of sewers ventilated for the years 1918 to 1922 :—

SEWERAGE SYSTEMS, SYDNEY.—PARTICULARS OF SERVICES, 1918 TO 1922.

Year ended the 30th June—			Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
			No.	No.	Miles.	Miles.	Feet.	Miles.
1918	..	..	139,777	698,885	1,113.34	60.07	479,464	1,039
1919	..	..	141,798	708,990	1,131.72	60.11	484,798	1,052
1920	..	..	145,304	726,520	1,161.94	63.73	503,362	1,096
1921	..	..	148,923	744,615	1,196.96	63.73	514,536	1,122
1922	..	..	153,789	768,945	1,226.96	63.73	527,766	1,162

(c) *Finances.* The following table shows the revenue, working expenses, capital cost, interest, etc., for the sewerage branch of the Metropolitan Board of Water Supply and Sewerage for the years 1918 to 1922 :—

SEWERAGE SYSTEMS, SYDNEY.—FINANCES, 1918 TO 1922.

Year ended the 30th June—		Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percentage of Working Expenses on Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
		£	£	£	£	%	£	£
1918	..	429,669	147,444	6,870,927	34.31	6.25	283,661	— 1,436
1919	..	497,406	151,951	6,963,573	30.54	7.14	291,347	54,108
1920	..	512,621	202,360	7,124,813	39.47	7.26	328,239	— 17,978
1921	..	615,615	229,441	7,329,632	37.27	8.39	341,674	44,500
1922	..	683,434	244,916	7,553,906	35.83	9.05	373,671	64,847

NOTE.—The minus sign (—) represents a loss.

(iv) *Newcastle Water Supply. (a) General.* No works of great importance were completed during the year ended 30th June, 1922, but 13 miles of water mains were laid, bringing the total up to 477 miles. The construction of the Chichester River pipe-line is being carried out by the Public Works Department, but is not yet completed.

(b) *Particulars of Services.* The following table gives the average daily supply of water, the total quantity pumped during the year, and the number of houses and population supplied for the years 1918 to 1922 :—

NEWCASTLE WATER SUPPLY.—SUMMARY, 1918 TO 1922.

Year ended 30th June—		Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Quantity Pumped for the Year.	Average Daily Supply.		Mains Laid.
		No.	No.	1,000 gallons.	1,000 gallons.	Per House.	Per Head of Estimated Population.	Miles.
1918	..	23,257	116,285	3,443	1,256,628	Gallons. 148	Gallons. 29.60	6
1919	..	24,079	120,395	4,065	1,483,807	169	33.76	13
1920	..	24,864	124,320	4,319	1,580,906	174	34.74	11
1921	..	25,874	129,370	4,688	1,711,187	181	36.23	14
1922	..	26,758	133,790	4,626	1,688,537	173	34.57	13

(c) *Finances.* The next table gives the revenue, working expenses, capital debt, and net profit for the years 1918 to 1922 :—

NEWCASTLE WATER SUPPLY.—FINANCES, 1918 TO 1922.

Year ended 30th June—	Revenue.	Working Expenses.	Capital Debt.	Percentage of Working Expenses on Revenue.	Percentage of Revenue on Capital Debt.	Interest and Sinking Fund.	Profit or Loss after Paying Working Expenses, Interest, and Sinking Fund.
	£	£	£	%	%	£	£
1918 ..	80,607	32,350	787,250	40.13	10.24	37,583	10,674
1919 ..	91,204	36,297	878,599	39.80	10.38	40,000	14,907
1920 ..	97,469	45,516	973,512	46.70	10.01	42,972	8,981
1921 ..	116,320	59,895	1,379,427	51.49	8.43	46,299	10,126
1922 ..	113,217	63,736	1,819,534	56.29	6.22	50,785	— 1,304

NOTE.—The minus sign (—) represents loss.

(v) *Newcastle Sewerage Works.* (a) *General.* Further progress has been made by the Department of Public Works with the construction of the sewerage works of Newcastle and suburbs, and further completed works, comprising the reticulation and ventilation of parts of Waratah, were transferred by the Department to the Hunter District Water Supply and Sewerage Board.

(b) *Sewerage Connections and Length of Sewers.* During the year ended 30th June, 1922, the number of properties connected with sewers was 1,198, making a total of 13,416. New sewers of a total length of 6 miles were constructed by the Board, bringing the total length of sewers under the Board's control to 157 miles.

(c) *Finances.* Particulars are given in the following table of revenue, working expenses, capital debt, interest, and profit or loss of the sewerage branch of the Board for the years 1918 to 1922 :—

NEWCASTLE SEWERAGE.—FINANCES, 1918 TO 1922.

Year ended 30th June—	Revenue.	Working Expenses.	Capital Debt.	Percentage of Working Expenses on Revenue.	Percentage of Revenue on Capital Debt.	Interest and Sinking Fund.	Loss after Paying Working Expenses, Interest, and Sinking Fund.
	£	£	£	%	%	£	£
1918 ..	24,215	9,478	463,858	39.14	5.22	23,219	8,482
1919 ..	26,721	9,784	480,390	36.61	5.56	25,206	8,269
1920 ..	20,050	12,734	518,804	45.40	5.41	27,892	12,576
1921 ..	32,164	16,007	555,513	49.77	5.79	30,577	14,420
1922 ..	39,477	18,863	577,833	47.78	6.83	34,446	13,832

(vi) *Water Supply and Sewerage in Country Towns.* (a) *General.* Under the Local Government Act of 1919, the Public Works Department may, upon application by any municipal council, construct, out of moneys voted by Parliament therefor, waterworks and sewerage works, and when completed transfer the control thereof to the council. The cost must be repaid in instalments, with interest fixed by the Governor, spread over a period not exceeding one hundred years.

(b) *Waterworks.* Up to the 30th June, 1922, waterworks had been completed in 63 towns and handed over to the respective municipal councils, with the exception of the Junee Water Supply, which has been placed under special administration, and the Grafton Water Supply, which is vested in a Board composed of three members of the Grafton council and three members of the South Grafton council. The capital debt of all waterworks on the date mentioned was £1,512,488, and the annual amount payable in instalments and for interest was £60,125. The water supply of Broken Hill, on which loan

expenditure to the amount of £481,795 was incurred, was constructed under a special Act, and the undertaking is administered by the Minister for Public Works. A few municipalities have also constructed waterworks out of their own resources.

(c) *Sewerage Works.* Sewerage and storm-water drainage works were completed in twenty municipalities at the 30th June, 1922. The capital debt thereon amounted to £513,414, and the amount payable annually in instalments and for interest to £22,184.

2. *Victoria.*—(i) *A. The Melbourne and Metropolitan Board of Works.* (a) *General.* All land within thirteen miles of the General Post Office is included within the metropolitan area for water supply and sewerage purposes. This area covers 434 square miles, and on the 24th April, 1923, embraced 21 cities, one town and part of another, one borough and parts of 13 shires, or a total of 37 municipalities or portions thereof. The Board is also empowered to supply water to certain municipalities outside the thirteen-mile radius, to the Metropolitan Farm at Werribee and the outfall-sewer area. Various other shires also arrange for bulk supplies of water. The liability on Government loans on the 30th June, 1922, was £938,182, and for loans raised by the Board £12,580,310. The Board is still empowered to borrow £621,442 before reaching the limit of its borrowing powers.

(b) *Revenue and Expenditure.* The following table shows the actual receipts and expenditure, and the loan receipts and expenditure of the Board from 1917-18 to 1921-22 :—

WATER SUPPLY AND SEWERAGE, MELBOURNE.—REVENUE AND EXPENDITURE, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
ORDINARY RECEIPTS.					
	£	£	£	£	£
Water supply	335,674	353,466	394,007	419,474	446,875
Sewerage, etc.	308,904	364,025	396,718	404,234	454,521
Live stock—Metropolitan farm ..	58,124	57,201	53,051	43,975	19,994
Interest { Water supply	1,053	826	1,707	1,021	1,917
{ Sewerage	8,514	7,525	9,509	8,737	8,477
Sinking fund proceeds	30,275	..	..	..	..
Total	742,544	783,043	854,992	877,441	931,784
ORDINARY EXPENDITURE.					
General management	50,094	49,700	51,259	59,420	65,612
Live stock, etc.—Metropolitan farm	85,195	63,595	60,851	68,742	53,162
Maintenance { Water supply	39,024	39,580	60,362	67,131	62,919
{ Sewerage	61,332	56,221	62,149	78,037	74,861
Interest { Water supply	140,906	145,458	147,750	156,645	179,034
{ Sewerage	354,211	361,898	362,886	369,204	411,828
War expenditure: Safeguarding works, etc.	6,458	3,535	1,195	..	..
Patriotic, Relief Funds, etc. ..	..	713	100	104	80
Sinking fund investment .. ..	..	30,000	5,036	4,813	..
Pensions and Compensation Allowances .. ..	..	..	..	..	6,007
Total	737,220	750,700	751,588	804,096	853,503
LOAN RECEIPTS.					
Water supply	3,482	2,720	4,712	7,016	11,748
Sewerage	42,673	47,339	53,973	47,769	46,120
Proceeds of loans	77,025	176,125	543,853	543,616	1,573,326
Miscellaneous	4,431	4,857	4,351	3,196	17,497
Total	127,611	231,041	606,889	601,597	1,648,691

WATER SUPPLY AND SEWERAGE, MELBOURNE.—REVENUE AND EXPENDITURE, 1917-18 TO 1921-22—*continued*.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
LOAN EXPENDITURE.					
	£	£	£	£	£
Water supply construction ..	23,569	35,237	55,937	119,744	316,329
Sewerage construction ..	182,431	191,012	205,516	257,240	300,818
Expenses in floating and redemption of loans ..	26,429	27,151	249,617	378,820	1,111,814
Miscellaneous ..	1,273	9,263	27,622	46,478	82,222
Total ..	233,702	262,663	538,692	802,282	1,811,183

B. Melbourne Water Supply. (a) Progress of Work. During the year ended 30th June, 1922, the construction of the lower section of the Maroondah Dam was further advanced, as also the tunnel for the diversion of the river at the O'Shanassy Dam site. A new service reservoir, to contain 43½ million gallons, was commenced at Mitcham, and the 24-in. mains from Mitcham to Notting Hill and from Camberwell to Malvern were completed. Up to the 30th June, 1922, the total amount expended on the O'Shanassy scheme was £499,962.

(b) Quantity of Water, Number of Houses, and Population Supplied. The following table gives various particulars for the years 1918 to 1922. The rate levied over the period has remained at sixpence in the pound.

WATER SUPPLY, MELBOURNE.—PARTICULARS OF SERVICES, 1918 TO 1922.

Year ended 30th June—	Number of Houses Served.	Estimated Population Supplied. (a)	Average Daily Supply.	Total Supply for the Year.	Average Daily Supply.		Length of Mains, Reticulation, etc.
					Per House.	Per Head of Estimated Population.	
					Gallons.	Gallons.	
	No.	No.	1,000 Gallons.	1,000 Gallons.			Miles.
1918 ..	161,743	735,607	39,133	14,283,490	241.94	53.20	1,694
1919 ..	165,046	751,115	41,222	15,045,938	249.76	54.88	1,708
1920 ..	170,550	771,871	44,360	16,235,587	260.10	57.47	1,723
1921 ..	177,998	785,845	46,772	17,071,857	262.77	59.52	1,783
1922 ..	184,453	802,144	47,661	17,396,103	258.39	59.42	1,857

(a) 31st December of previous year.

(c) Capital Cost, Revenue, Expenditure and Surplus. The following table shows the total cost of construction, revenue, working expenses (exclusive of renewals and special war expenditure), interest and surplus for the five years ending 30th June, 1922, together with the total amounts to that date :—

WATER SUPPLY, MELBOURNE.—FINANCES, 1918 TO 1922.

Year ended 30th June—	Capital Cost.	Revenue.	Working Expenses.	Percentage of Working Expenses on Revenue.	Interest.	Surplus.
	£	£	£	%	£	£
1918 ..	21,214	331,955	60,714	18.29	139,458	131,783
1919 ..	32,245	372,180	59,394	15.96	153,573	159,213
1920 ..	47,251	398,173	62,941	15.80	156,588	178,644
1921 ..	112,025	407,093	78,755	19.34	173,550	154,788
1922 ..	310,578	438,399	86,925	19.82	196,746	154,728
Total ..	5,390,920	10,740,156	1,851,535	17.24	4,646,526	4,242,095

C. *Melbourne Sewerage.* (a) *Progress of Work.* During the year ended 30th June, 1922, two electric centrifugal pumping units, with a daily capacity of 18 million gallons, were installed at the pumping station. Four reticulation areas were completed, and six new areas commenced, while twenty minor reticulations and extensions were carried out.

(b) *Number of Houses Connected, etc.* The following table gives the number of houses connected, the estimated population served, the total length of sewers, and the number of gallons of sewage pumped for the years 1918 to 1922 :—

MELBOURNE SEWERAGE.—SUMMARY, 1918 TO 1922.

Year ended 30th June—			Number of Houses Connected.	Estimated Population Served.	Length of Sewers.	Sewage Pumped.
			No.	No.	Miles.	1,000 Gallons.
1918	..	..	151,622	697,461	1,626	13,208,141
1919	..	..	155,238	714,095	1,664	12,964,252
1920	..	..	158,735	730,181	1,704	12,576,051
1921	..	..	161,955	717,460	1,734	13,813,897
1922	..	..	166,871	739,239	1,774	14,320,960

(c) *Finances.* The capital cost, revenue, working expenses (exclusive of renewals), percentage of working expenses on revenue, interest and deficiency for the years 1918 to 1922 are given below :—

MELBOURNE SEWERAGE.—FINANCES, 1918 TO 1922.

Year ended 30th June—			Capital Cost.	Revenue.	Working Expenses.	Percentage of Working Expenses on Revenue.	Interest.	Deficiency.
			£	£	£	%	£	£
1918	..	..	155,911	327,399	85,327	26.06	345,521	103,449
1919	..	..	138,884	379,900	87,954	23.15	372,235	80,289
1920	..	..	158,288	409,057	95,287	23.29	373,925	60,155
1921	..	..	203,324	411,177	119,304	29.01	378,023	86,150
1922	..	..	242,220	441,516	121,045	27.41	422,295	101,824
Total	..	..	8,322,790	6,360,351	1,499,576	23.58	7,014,278	2,153,503

(d) *Metropolitan Sewage Farm.* A further 341 acres were acquired in 1922, bringing the total area up to 13,219 acres. The capital cost to the 30th June in that year was £611,856. The following table gives the capital cost, revenue, working expenses (exclusive of renewals), interest, net cost of sewage purification, and trading profit for the years 1918 to 1922 :—

METROPOLITAN SEWAGE FARM.—FINANCES, 1918 TO 1922.

Year ended 30th June—			Capital Cost.	Revenue.	Working Expenses.	Interest.	Net cost of Sewage Purification.	Trading Profit.
			£	£	£	£	£	£
1918	..	..	8,050	29,346	14,567	22,374	7,595	24,435
1919	..	..	6,667	38,847	13,827	22,668	(a) 2,352	34,112
1920	..	..	8,099	46,921	18,296	22,964	(a) 5,661	41,061
1921	..	..	21,245	22,925	22,744	23,550	23,360	15,750
1922	..	..	12,472	2,993	23,588	28,711	49,306	(b) 4,837

(a) Profit.

(b) Loss.

(ii) *Geelong Waterworks and Sewerage Trust.* (a) *General.* The Geelong Waterworks and Sewerage Trust, constituted in 1908, consists of five commissioners, two of whom represent the city of Geelong, one the town of Geelong West, one the borough of Newtown and Chilwell, and one the shires of Bellarine, Corio and South Barwon. The amount of loan money which may be raised is limited to £725,000 for water supply undertaking, £502,000 for sewerage undertaking, and £200,000 for sewerage installations to properties under the deferred payment system. The population supplied is about 37,000.

(b) *Water Supply.* The catchment area is about 16,000 acres. The works comprise the Korweinguboorra Reservoir and the Bolwarra Weir on Eastern Moorabool River, together with the necessary channels, mains and reservoirs. The storage capacity of all the reservoirs is 2,709,335,280 gallons, and there are 178 miles of reticulation mains within the city of Geelong and its suburbs. The total expenditure on waterworks to the 30th June, 1922, was £471,000, and the revenue for the year 1921-22 was £36,424.

(c) *Sewerage Works.* The sewerage scheme consists of a main outfall sewer to the ocean at Black Rock, about 9 miles from Geelong, and 75 miles of reticulation mains have already been laid. The drainage area is 8,081 acres, and the number of buildings within the drainage area is 8,800 and within the sewered areas 7,200, while 6,200 buildings have been connected with the sewers. Up to the 30th June, 1922, the total expenditure on sewerage works was £397,547 and on the cost of sewerage installations under deferred payment conditions £125,941. The revenue amounted to £28,533.

(iii) *Bendigo Sewerage Authority.* The members of the Bendigo City Council constitute this authority. The sewerage district comprises the whole area of the city of Bendigo. The works, when completed, are estimated to cost £250,000, and consist of treatment works and a main outfall sewer, 4,000 feet of which had been completed by the end of April, 1922.

(iv) *Water Supply in Country Towns and Districts.* Most of the country waterworks are controlled by the State Rivers and Water Supply Commission, but a number of other waterworks are controlled by Waterworks Trusts or by municipal corporations.

The following table gives particulars as to the waterworks under the control of trusts and municipal corporations for the years 1918 to 1922 :—

COUNTRY WATERWORKS, VICTORIA.—FINANCES, 1918 TO 1922.

Year.	Under Waterworks Trusts.				Under Municipal Corporations.			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Current Interest Outstanding.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Current Interest Outstanding.
	No.	£	£	£	No.	£	£	£
1918 ..	98	1,196,335	904,229	12,632	29	773,998	514,115	10,379
1919 ..	98	1,210,097	907,087	13,898	29	779,834	515,240	9,658
1920 ..	98	1,189,259	892,222	14,970	29	782,115	515,364	10,614
1921 ..	98	1,215,526	905,842	10,171	29	784,465	512,185	2,300
1922 ..	98	1,256,973	936,112	11,342	29	785,602	509,358	1,590

3. *Queensland.*—(i) *The Metropolitan Water Supply and Sewerage Board.* (a) *General.* The filtration works on Holt's Hill having been put into operation, the whole of the water supply in the Brisbane area is now filtered. Four additional filter-beds are under construction. The service reservoirs on Bartley's Hill, Highgate Hill and Wickham Terrace have a total capacity of seven million gallons. A new reservoir is being constructed on Tarragindi Hill, a suburb of Brisbane, to contain approximately 14,000,000 gallons. This reservoir is now so near completion that it will probably be ready for use early in 1923.

(b) *Brisbane Waterworks. Summary.* The following table shows the length of mains, the number of tenements connected, the population supplied, the total quantity of water

supplied, the average daily supply, and the average daily supply per head of population during each year from 1918 to 1922 :—

WATERWORKS, BRISBANE.—SUMMARY, 1918 TO 1922.

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population.
	Miles.	No.	No.	1,000Gallons.	Gallons.	Gallons.
1918	451½	34,450	172,250	3,159,105	8,655,082	50.24
1919	477½	36,998	178,620	3,628,478	9,941,036	55.65
1920	505	40,266	193,160	3,293,061	8,997,436	46.58
1921	546½	42,408	206,685	3,360,747	9,207,527	44.54
1922	576½	46,025	221,080	3,648,833	9,996,805	45.22

The total length of the trunk mains is 129¾ miles.

(c) *Brisbane Sewerage Scheme.* The outfall sewers are completed, and the main sewer from the treatment works to North Quay, a distance of 11 miles, is nearly completed. In addition a main sewer 3½ miles long, with a tunnel under the Brisbane River, is completed, while other sewers and the treatment works are nearly finished. The construction of the power house and pumping stations was commenced during the year. Altogether 79,429 feet of main sewers and 49,313 feet of reticulation sewers are complete, and 29,113 feet of the former are under construction. The number of houses which have been surveyed is 22,311.

(d) *Brisbane Waterworks and Sewerage Works Finances.* The subjoined table gives the total capital cost, the revenue and working expenses, the amount of interest and loan redemption during the years 1918 to 1922 :—

WATER AND SEWERAGE WORKS, BRISBANE.—FINANCES, 1918 TO 1922.

Year.	Capital Cost.	Revenue.	Working Expenses.	New Works Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1918	2,683,846	134,121	65,653	259,132	64,039
1919	3,115,002	156,743	79,667	431,156	72,354
1920	3,661,580	216,620	94,070	546,578	88,033
1921	4,057,994	269,741	97,379	396,414	105,259
1922	4,618,211	303,379	105,397	560,217	188,038

(ii) *Country Towns Water Supply.* In addition to the City of Brisbane there were at the end of the year 1921 thirty towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The subjoined statement gives particulars of all the water supply systems exclusive of Brisbane, for the year 1921 :—

COUNTRY WATER SUPPLY SYSTEMS, QUEENSLAND, 1921.

Cost of Construction to 31st December, 1921—£1,058,347.

Receipts.		£	Expenditure.		£
Rates and sales of water	..	121,104	Administration	..	20,079
Government loans	..	20,601	Construction	..	28,174
Other	..	5,088	Maintenance	..	44,988
			Interest and redemption	..	32,387
			Other expenses	..	26,627
Total receipts	..	146,793	Total	..	152,255
Assets	..	806,193	Liabilities	..	551,945

4. South Australia.—(i) *General.* The whole of the water supply systems as well as the several sewerage systems are constructed and maintained by the Public Works Department.

(ii) *Adelaide Waterworks.* (a) *Summary.* The following table gives particulars for the years 1917–18 to 1921–22. The figures for consumption are as recorded by gaugings taken at the reservoirs and include evaporation and absorption. There are very few meters in the Adelaide district.

ADELAIDE WATERWORKS.—SUMMARY, 1917-18 TO 1921-22.

Year ended 30th June—			Number of Assessments	Annual Value.	Area Supplied.	Capacity of Reservoirs.	Length of Mains.	Annual Consumption (a).
			No.	£	Acres.	Million Gallons.	Miles.	1,000 Gallons.
1918	..	..	79,423	2,173,634	106,465	4,106	901	4,266,000
1919	..	..	80,747	2,214,089	106,465	4,106	915	5,292,000
1920	..	..	83,085	2,336,093	106,465	4,106	947	5,626,000
1921	..	..	84,995	2,584,704	106,465	7,753	991	5,179,000
1922	..	..	87,279	2,781,473	111,295	7,753	1,010	5,873,000

(a) For previous year ending 31st December.

(b) *Finances.* Particulars available are shown in the subjoined table for the years 1917–18 to 1921–22 :—

ADELAIDE WATERWORKS.—FINANCES, 1917-18 TO 1921-22.

Year ended 30th June—		Capital Cost.	Revenue.		Expenses.			Percentage of Net Revenue on Capital Cost.
			Rates.	Total.	Engineering Branch.	Revenue Branch.	Total.	
		£	£	£	£	£	£	%
1918	..	2,039,007	92,650	118,985	27,438	6,860	34,298	4.15
1919	..	2,079,957	93,328	126,111	29,161	6,982	36,143	4.33
1920	..	2,172,518	96,103	137,488	35,902	7,508	43,410	4.33
1921	..	2,768,769	107,665	177,722	42,700	9,678	52,378	4.53
1922	..	2,843,507	134,472	204,996	43,811	9,956	53,767	5.32

(iii) *Adelaide Sewerage.* Particulars for the years 1917–18 to 1921–22 are given hereunder :—

ADELAIDE SEWERAGE.—SUMMARY, 1917-18 TO 1921-22.

Year ended 30th June—	Length of Sewers.	Number of Con- nections.	Capital Cost of Revenue- Producing Works.	Revenue.		Working Expenses.		Percentage of Net Revenue on Capital Cost.
				Rates, etc.	Total.	Mainten- ance, etc.	Total.	
	Miles.	No.	£	£	£	£	£	%
1918 ..	354	37,043	830,703	59,345	78,405	12,054	23,998	6.55
1919 ..	358	37,837	847,160	60,808	75,505	13,226	23,636	6.12
1920 ..	363	38,979	860,438	65,744	86,076	13,396	24,046	7.21
1921 ..	368	40,168	894,085	74,582	87,183	16,222	28,587	6.55
1922 ..	373	41,240	946,213	79,562	90,525	17,083	29,893	6.41

(iv) *Country Towns Water Supply.* (a) *Summary.* The chief items of information regarding these undertakings are set forth in the table below for the years 1917-18 to 1921-22 :—

**COUNTRY TOWNS WATERWORKS, SOUTH AUSTRALIA.—SUMMARY,
1917-18 TO 1921-22.**

Year ended 30th June—				Number of Assessments.	Area Supplied.	Capacity of Reservoirs.	Length of Mains.	Annual Consumption (a).
				No.	Acres.	Million Gallons.	Miles.	1,000 Gallons.
1918	..	..	..	55,716	4,200,704	4,977	3,002	788,920
1919	..	..	..	56,242	4,201,294	4,977	3,031	967,773
1920	..	..	..	57,258	4,202,360	5,068	3,070	958,068
1921	..	..	..	58,552	4,847,295	4,978	3,136	770,030
1922	..	..	..	57,623	4,850,448	4,978	3,176	823,123

(a) For previous year ending 31st December.

(b) *Finances.* The next table gives financial information for the years 1917-18 to 1921-22 :—

**COUNTRY TOWNS WATERWORKS, SOUTH AUSTRALIA.—FINANCES,
1917-18 TO 1921-22.**

Year ended 30th June—		Capital Cost.	Revenue.		Working Expenses.			Percentage of Net Revenue on Capital Cost.
			Rates.	Total.	Engineering Branch.	Revenue Branch.	Total.	
		£	£	£	£	£	£	%
1918	..	3,860,437	72,887	101,682	26,100	5,309	31,409	1.82
1919	..	3,924,385	70,722	101,262	31,412	5,782	37,194	1.63
1920	..	4,017,265	70,526	108,584	38,651	6,297	44,948	1.58
1921	..	4,168,876	73,024	110,656	42,084	7,220	49,304	1.47
1922	..	4,368,091	66,527	96,373	50,475	7,821	58,296	0.87

(v) *Other Sewerage Systems.* The following table gives information in summarized form regarding the two suburban sewerage systems, viz. : the Glenelg system and the Port Adelaide and Semaphore system, for the years 1917-18 to 1921-22 :—

**SUBURBAN SEWERAGE SYSTEMS, SOUTH AUSTRALIA.—SUMMARY,
1917-18 TO 1921-22.**

Year ended 30th June—		Length of Sewers.	Number of Connections.	Capital Cost.	Revenue.		Working Expenses.		Percentage of Net Revenue on Capital Cost.
					Rates.	Total.	Maintenance.	Total.	
		Miles.	No.	£	£	£	£	£	%
1918	..	56	3,683	337,587	7,545	8,634	4,273	4,445	1.24
1919	..	57	4,303	346,195	8,710	9,869	5,129	5,454	1.27
1920	..	58	4,657	354,084	8,765	9,849	5,581	5,952	1.10
1921	..	59	5,216	372,520	10,507	11,606	10,148	10,607	0.27
1922	..	63	5,868	400,198	12,145	13,520	10,347	10,978	0.64

5. **Western Australia.**—(i) *General.* The water supply and sewerage systems of Western Australia are all under the management of Government departments and are divided into the following categories:—(a) Metropolitan Water Supply, Sewerage and Drainage covering Perth, Fremantle, Claremont, Guildford, Midland Junction and Armadale District, (b) Goldfields Water Supply, (c) Water Supply of other towns, (d) Agricultural Water Supply, (e) other Mines Water Supply, and (f) artesian and sub-artesian waters. The consumption of water by the railways is included in the figures for water supplied given hereunder.

(ii) *Metropolitan Water Supply, Sewerage and Drainage.* (a) *General.* The sources of the metropolitan water supply are the Victoria Reservoir, Bickley Brook, Lower Bickley Brook, Mundaring Reservoir, five bores and the Armadale Pipe Head Dam and Well. The sewerage system consists of septic tanks and percolating filters for Perth and septic tanks and ocean outfall for Fremantle.

(b) *Summary.* The following table gives particulars regarding water supply for the years 1918 to 1922.

At the 30th June, 1922, the number of houses connected with sewers was 14,486.

WATER SUPPLY, WESTERN AUSTRALIA.—SUMMARY, 1918 TO 1922.

Year ending 30th June—	Estimated Population Supplied.	Number of Houses Supplied.	Water Supplied.	Average Daily Supply.		Number of Meters.	Length of Mains.
				Per Head.	Per House.		
	No.	No.	1,000 Gallons.	Gallons.	Gallons.	No.	Miles.
1918	136,428	32,498	1,873,679	37.63	157.96	20,771	614
1919	153,183	33,406	2,186,987	39.11	179.36	20,443	623
1920	166,414	34,677	2,256,100	37.04	177.76	21,437	633
1921	171,198	35,666	2,327,042	37.24	178.75	21,367	645
1922	175,876	36,641	2,600,697	40.51	194.46	21,511	659

(c) *Finances.* The table hereunder gives the capital cost, the revenue and the expenditure of the water supply and sewerage and drainage branches separately for the years 1918 to 1922 :—

WATER SUPPLY AND SEWERAGE AND DRAINAGE, WESTERN AUSTRALIA.—FINANCES, 1918 TO 1922.

Year ended 30th June—	Water Supply.			Sewerage and Drainage.		
	Capital Cost.	Revenue.	Expendi- ture.	Capital Cost.	Revenue.	Expendi- ture.
	£	£	£	£	£	£
1918	1,057,444	91,380	88,082	935,595	53,259	61,578
1919	1,080,876	89,215	90,907	933,886	54,457	64,325
1920	1,119,910	96,882	103,570	947,411	59,628	66,001
1921	1,223,951	113,439	117,136	958,452	61,961	71,773
1922	1,309,262	122,669	129,412	968,540	70,086	72,153

(iii) *Goldfields Water Supply.* The source of supply for the Coolgardie and adjacent goldfields, as well as for places on or near the pipe-line, is the Mundaring Reservoir, which has a capacity of 4,650 million gallons. There are three classes of consumers—the railways, the mines, and “other,” and in 1921–22 the railways consumed 7½ per cent., the

mines 23 per cent., and “other” 69½ per cent. of the supply. The following table gives statistical data for the years 1918 to 1922 :—

GOLDFIELDS WATER SUPPLY, WESTERN AUSTRALIA.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Total Consumption.	Number of Services.	Length of Water Mains.	Capital Cost.	Revenue.	Expenditure.
	1,000 gallons.	No.	Miles.	£	£	£
1918	1,044,000	12,207	1,231	3,393,522	199,302	283,547
1919	1,117,000	12,231	1,222	3,393,510	203,266	287,562
1920	1,126,000	12,244	1,221	3,401,543	176,364	295,574
1921	1,130,000	12,238	1,219	3,427,300	187,010	311,070
1922	1,153,320	10,789	1,224	3,432,234	180,127	297,027

(iv) *Water Supply of other Towns.* During the year 1921–22, there were ten other towns provided with water supplies, apart from those in the metropolitan area and those supplied by the Goldfields Water Scheme. The total consumption of water by these ten towns for the year ending 30th June, 1922, was 115,962,000 gallons, and the estimated population served was 10,316. The average daily consumption was 30.80 gallons per head. In eleven other towns the water supplies are administered by local boards.

(v) *Agricultural Water Supply.* During the year 1921–22, five tanks were excavated, five wells sunk, and 25 bores put down. The total depth of the bores was 1,241 feet. One yielded fresh water, two stock water, and the balance were either dry or yielded only salt water. During the twelve years from the 1st July, 1910, to the 30th June, 1922, 370 tanks were built, 297 wells sunk, and 2,599 bores put down to a total depth of 128,104 feet. Of the bores mentioned, 443 yielded fresh, and 236 stock water.

(vi) *Other Mines Water Supply.* Seven bores were put down to a total depth of 462 feet during the year 1921–22. Three of these provided fresh, and two salt water. Two fresh-water wells were also sunk to a depth of 65 feet. All of these were on the Eastern Goldfields.

(vii) *Artesian and Sub-artesian Waters.* Up to the 30th June, 1922, the total number of bores put down in search of artesian or sub-artesian water was 127, ranging in depth from 56 to 4,006 feet.

6. *Tasmania.*—(i) *Hobart Water Supply.* The cost of this undertaking to the 31st December, 1922, was £393,004, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at 31st December, 1922, amounted to £342,805. At the same date the number of tenements supplied in the city and suburbs was 9,450, the population 45,500, and the length of reticulation mains 101 miles. The revenue and expenditure for the years 1918 to 1922 were as follows :—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1918 TO 1922.

Heading.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Revenue	24,160	26,832	28,287	30,671	36,798
Expenditure	26,490	27,468	30,696	33,773	33,697

(ii) *Hobart Sewerage System.* The revenue for the year ended 31st December, 1922, was £19,774. Up to that date 75 miles of sewers had been laid in connexion with the metropolitan system at a cost of £198,813, and 7,416 tenements connected. In connexion with

the suburban sewerage systems, $17\frac{1}{2}$ miles of sewers, connecting with 501 tenements, were constructed at a cost of £105,809. The sewerage of New Town is being proceeded with, the cost of construction, including surveys and sewerage outfall to 31st January, 1923, being £28,150.

(iii) *Water Trusts.* Apart from a number of water trusts incorporated in municipalities, in 1921 there were three such trusts, the revenue of which amounted to £994 and the expenditure to £1,180.

§ 6. Harbour Boards and Trusts.

1. **New South Wales.**—(i) *Sydney Harbour Trust.* (a) *General.* The Sydney Harbour Trust, which consists of three Commissioners appointed by the Government, controls the whole of the wharves resumed by the Government in 1901. The Commissioners also provide and maintain the lighting and marking of the harbour and carry out all necessary dredging. The whole of what might be termed city wharves are owned by the Commissioners and leased to various shipping companies, but the Trust directly operates and maintains a certain number of open wharves. Outside the city area the wharves are, to a large extent, privately controlled, but all structures beyond high-water mark are held under leases issued by the Trust. The extent of wharfage accommodation now available for use totals 60,000 lineal feet, exclusive of 7,800 lineal feet privately owned.

The depth of water at the entrance to the port is not less than 80 feet, and in the channel there are 40 feet at low-water spring tides. The foreshores of Sydney Harbour are about 200 miles in length. The area of the water in the port is 14,284 acres, of which 3,000 acres have a depth ranging from 35 to 160 feet.

Since its inception, the Trust has spent £5,535,040 on the reconstruction and extension of the wharfage of the port. Over 12,000 lineal feet of old and obsolete wharfage have been demolished, and nearly 30,000 lineal feet of new berths have been constructed. Other improvements include 2,250,000 square feet of floor area of new sheds and nearly four miles of new roadways.

During the year 1922, 1,297,182 tons of material were dredged at a cost of £39,288. In the process of towing such material, 31,283 miles were run at a cost of £33,923.

(b) *Finances.* The subjoined table gives particulars concerning the finances of the Trust for the years 1918 to 1922:—

SYDNEY HARBOUR TRUST.—FINANCES, 1918 TO 1922.

Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.	Interest.	Balance.
	Wharfage and Harbour Rates.	Tonnage Rates and Berthing Charges.	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1918 ..	280,476	26,862	269,121	576,459	170,854	8,796,521	348,023	57,582
1919 ..	323,253	31,347	264,300	618,900	179,899	8,691,972	336,823	102,178
1920 ..	323,306	22,398	312,609	658,313	206,450	8,959,887	353,037	98,826
1921 ..	429,986	43,577	323,648	797,211	244,764	9,449,213	438,210	114,237
1922 ..	451,981	44,465	330,676	827,122	261,120	9,868,165	488,552	77,450

2. **Victoria.**—(i) *Melbourne Harbour Trust.* (a) *General.* Information regarding the origin and constitution of this Trust will be found in Official Year Book No. 12, pp. 970 *et seq.* During the year 1922, the length of sheds in the port has been increased by 1,100 feet, making the total length 19,468 feet, covering an area of 1,125,295 square feet. The quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to 74,000,000 cubic yards. The Trust has expended £335,679 in reclaiming land within its jurisdiction.

(b) *Finances.* The following table gives particulars of the revenue and expenditure of the Trust from 1918 to 1922 inclusive. Up to 30th June, 1922, the total capital expenditure amounted to £4,885,456.

MELBOURNE HARBOUR TRUST.—FINANCES, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
REVENUE.					
	£	£	£	£	£
Rates, rents, etc.	314,777	323,253	380,203	491,677	589,583
Interest	123	193	46	42	80
Other receipts	10,691	10,851	10,253	9,718	12,808
Total	325,591	334,297	390,502	501,437	602,471
EXPENDITURE.					
Management and general expenses ..	45,373	45,570	51,178	57,226	61,763
Interest	95,980	104,245	106,735	114,860	144,883
Total	141,353	149,815	157,913	172,086	206,646
Less standing charges added to works	23,595	23,495	29,150	30,862	34,628
Total	117,758	126,320	128,763	141,224	172,018
Wharfage and other refunds ..	2,382	1,677	2,529	3,064	3,866
Consolidated revenue of Victoria ..	62,305	62,460	75,554	96,224	114,986
Flotation of loans expenses ..	3,012	7,956	300	29,525	35
Redemption of loans expenses ..	2,392	4,499	..	615	..
Maintenance	35,706	77,766	105,147	120,412	126,051
Total expenditure	223,555	280,678	312,293	391,064	416,956
Surplus on revenue account ..	102,036	53,619	78,209	110,373	185,514
Less depreciation and renewals account and sinking fund	52,000	52,500	52,500	65,000	100,000
Net surplus on revenue account	50,036	1,119	25,709	45,373	85,514
CAPITAL EXPENDITURE.					
Land and property	1,153	964	3,221	2,461	11,906
Deepening waterways	108,037	68,746	80,720	81,699	98,331
Wharves construction	37,321	77,305	50,084	79,206	45,613
Approaches construction	11,417	3,774	2,364	1,565	9,084
Other harbour improvements ..	7,352	3,068	2,936	14,099	25,311
Floating plant	811	1,435	834	2,957	1,708
General plant	130	509	883	1,131	925
Total	166,221	155,801	141,042	183,118	192,878

(ii) *Geelong Harbour Trust.* (a) *General.* The Geelong Harbour Trust was constituted in 1905, and is under the control of three Commissioners appointed by the Governor in Council. The Commissioners have vested in them the Port of Geelong which includes Corio Bay, Portarlington, some miles of Bay frontage, and certain lands on the River Barwon and at Barwon Heads. The Commissioners have established complete facilities for the export of grain, frozen meat, and other produce, and have also constructed extensive abattoirs and freezing works. A large amount of money has been expended in the reclamation of waste lands, and on part of such lands a dairy farm with a complete system of drainage and irrigation has been established.

(b) *Finances.* The following table gives financial details for the four years 1919 to 1922 :—

GEELONG HARBOUR TRUST.—FINANCES, 1919 TO 1922.

Year.	Loans.	Sinking Fund.	Revenue.	Expenditure.
	£	£	£	£
1919	591,000	27,542	48,213	56,207
1920	591,000	27,954	50,020	60,625
1921	591,000	28,667	49,636	53,605
1922	591,000	29,379	54,234	52,066

3. *Queensland.*—(i) *Bowen Harbour Board.* (a) *General.* The Bowen Harbour Board consists of seven members, of whom two are appointed by the Governor in Council and the remainder elected by the ratepayers of the Town of Bowen and adjacent shires. The district under its jurisdiction comprises the area within the boundaries of the Town of Bowen, the Shires of Proserpine and Wangaratta, and division I. of the Shire of Ayr.

(b) *Finances.* The capital expenditure up to the 31st December, 1922, was £45,590, while for the year 1922 the receipts were £8,585 and the expenditure £6,407.

(ii) *Bundaberg Harbour Board.* (a) *General.* The Bundaberg Harbour Board was constituted under the Act of 1895, and consists of nine members, of whom one is appointed by the Governor in Council, four by adjacent local authorities, and four by persons who have paid harbour dues amounting to five pounds and upwards. The Harbour Board District consists of the area comprised within the boundaries of the City of Bundaberg and the Shires of Gooburru and Woongarra. The jurisdiction of the Board extends over the harbour of Bundaberg and certain lands adjacent to the River Burnett.

(b) *Finances.* The revenue for the year 1922 amounted to £5,803 as against £4,281 for the previous year, and the expenditure to £5,433 as compared with £4,001 for 1921.

(iii) *Cairns Harbour Board.* (a) *General.* The Cairns Harbour Board consists of twelve members, representing the town of Cairns and eight adjoining shires. The wharves at Cairns, which are all under the control of this Board, are constructed of reinforced ferro-concrete, 1,200 feet having been completed, while 300 feet are still under construction. There is also under construction an electrically-driven mechanical sugar-handling conveyor, estimated to cost £35,000.

(b) *Finances.* During the year 1922 the revenue of the Board was £44,256, of which £40,032 was derived from harbour, berthage and miscellaneous dues.

(iv) *Gladstone Harbour Board.* (a) *General.* The Gladstone Harbour Board is composed of seven members, two of whom are appointed by the Governor in Council and five elected by the electors of the town of Gladstone and the shires of Calliope and Miriam Vale. The works under the control of the Board are (i) Auckland Point Jetty and Wharf, constructed of reinforced concrete and wood, the berth being 680 feet long, with an average depth alongside of 26 feet, and (ii) the municipal wharf in Auckland-street.

(b) *Finances.* The total capital expenditure to the end of 1922 amounted to £60,000. The revenue for 1922 was £2,332 and the expenditure £2,536.

(v) *Mackay Harbour Board.* (a) *General.* The Mackay Harbour Board consists of nine members, elected by the ratepayers of the City of Mackay and three adjacent shires. The works being carried out are in connexion with the director wall in the Pioneer River, of which about 7,900 feet have already been built, leaving a further 3,700 feet not yet completed.

(b) *Finances.* The total capital expenditure of the Board from its inception in 1897 is not available, but the capital expenditure for the year ended 31st December, 1922, was £1,174. During the year 1921 the receipts amounted to £10,650 and the expenditure to £16,969.

(vi) *Rockhampton Harbour Board.* (a) *General.* The Rockhampton Harbour Board consists of eleven members, of whom seven are elected by the electors on the rolls for the city of Rockhampton, the town of Mount Morgan and the shires of Fitzroy and Livingstone. The remaining four are elected by the councillors of groups of inland shires.

In the port of Rockhampton, which comprises the tidal area of the Fitzroy River as far as the entrance to Keppel Bay, there are three principal places where steamers may lie and discharge cargo, viz., (i) Rockhampton itself, (ii) Port Alma, where the oversea steamers berth, and (iii) Broadmount, originally built for the oversea trade of forty-five years ago. The wharves at these three places are connected by rail with Rockhampton and with the main central line. The Board undertakes the work of improving the navigable channels throughout the estuary and river and of maintaining the wharves at Port Alma and Rockhampton.

(b) *Finances.* The revenue for the year 1922 was £33,632, of which £9,671 represented loans, and the expenditure was also £33,632, which included £10,043 interest on loans.

(vii) *Townsville Harbour Board.* (a) *General.* The Townsville Harbour Board was created in 1896, and is composed of nine members, of whom two are appointed by the Governor in Council and the remaining seven are elected by the electors of Townsville and adjacent towns and shires. All harbour works and conveniences for the use of shipping are under the control of the Board.

(b) *Finances.* The total expenditure since the inception of the Board is £1,464,560, while the receipts for the year 1922 were £56,821 and the expenditure for the same year £64,720.

(viii) *Harbour Boards—Financial Summary.* The following table shows the total revenue and expenditure of Harbour Boards and the outstanding loans for the years 1917 to 1921:—

HARBOUR BOARDS, QUEENSLAND.—FINANCIAL SUMMARY, 1917 TO 1921.

Year.	Number of Boards.	Revenue.			Expenditure.			Outstanding Loans.
		Wharfage and Harbour Dues.	Government Loans.	Total.	Works and Maintenance.	Interest and Redemption of Loans.	Total.	
		£	£	£	£	£	£	£
1917	5	110,300	5,750	134,957	75,584	36,920	126,446	860,011
1918	5	116,852	4,950	142,306	88,817	36,557	146,824	856,422
1919	6	87,153	9,044	139,592	65,629	35,570	128,663	886,677
1920	6	108,212	17,712	179,432	90,761	51,492	178,436	887,628
1921	7	117,417	46,219	183,949	101,563	65,452	199,341	979,341

4. *Western Australia.*—(i) *Fremantle Harbour Trust.* (a) *General.* Fremantle Harbour is controlled by a Board of five Commissioners appointed by the Governor in Council. A description of the works was given in a previous Year Book (see No. 12, p. 973). Since that account was written, the inner harbour and entrance channel have been dredged to a depth of 36 feet below the lowest known low water. The berthage accommodation at all the quays has also been deepened to 36 feet.

(b) *Finances.* The following table gives financial data for the years 1918 to 1922:—

FREMANTLE HARBOUR TRUST.—FINANCES, 1918 TO 1922.

Year ended 30th June—	Revenue.	Expenditure.	Gross Amount Paid to the Treasury.				
			Interest.	Sinking Fund.	Renewals Fund.	Surplus Revenue.	Total.
	£	£	£	£	£	£	£
1918	162,659	83,354	64,450	18,414	..	..	82,864
1919	185,817	94,093	70,861	18,837	..	2,026	91,724
1920	281,600	130,740	73,872	19,301	2,000	54,513	149,686
1921	301,065	133,904	77,240	19,819	2,000	71,410	170,469
1922	282,038	126,597	80,218	20,277	2,000	56,491	158,986

(ii) *Bunbury Harbour Board.* (a) *General.* The Bunbury Harbour Board was constituted in 1909, and consists of five members appointed by the Government. The jetty is 4,900 feet long with berthage accommodation of 2,750 feet on the west side and 3,000 feet on the east side. The depth of water alongside ranges from 16 to 27½ feet. Electric and steam gantry cranes are available.

(b) *Finances.* The following table gives the capital expenditure for each of the five years ending 30th June, 1918, to 1922, together with the revenue and expenditure for the same years. Any surplus revenue is paid into the Consolidated Revenue Fund to meet interest and sinking fund.

BUNBURY HARBOUR BOARD.—FINANCES, 1918 TO 1922.

Year ended 30th June—				Capital Expenditure.	Revenue.	Expenditure.	Paid to Consolidated Revenue Fund.
				£	£	£	£
1918	..	..	..	328,851	9,598	4,851	4,747
1919	..	..	..	338,392	12,510	5,381	7,129
1920	..	..	..	377,688	16,487	8,013	8,474
1921	..	..	..	417,611	28,980	8,843	20,137
1922	..	..	..	440,965	26,175	9,818	16,357

5. *Tasmania.*—(i) *Marine Board of Hobart.*—(a) *General.* The Marine Board of Hobart consists of nine wardens elected by the ship-owners of the Port of Hobart and the importers and exporters of goods into or from any port within the jurisdiction of the Board. The Board has jurisdiction over all ports, harbours and waters within the limits of the coast line from South-West Cape round the southern and eastern coasts to Cape Portland, and within all islands adjacent to such coast line. The duties of the Board are to maintain all wharves within its jurisdiction which are not vested in another authority or belonging to any private person, to construct new wharves where necessary, and to improve the navigation where desirable.

(b) *Finances.* The following table gives details for the years 1918 to 1921 and for the half-year ending 30th June, 1922 :—

MARINE BOARD OF HOBART.—FINANCES, 1918 TO 30th JUNE, 1922.

Year.	Capital Debt.	Revenue.			Expenditure.			
		Harbour Improve- ments, Debentures, etc.	General.	Total.	Harbour Improve- ments.	Interest and Sinking Fund.	General.	Total.
	£	£	£	£	£	£	£	£
1918 ..	106,350	3,775	20,046	23,821	3,131	5,400	15,487	24,018
1919 ..	106,350	367	21,505	21,872	108	5,700	14,603	20,411
1920 ..	106,350	4,568	30,584	35,152	3,859	5,585	21,807	31,251
1921 ..	96,350	..	30,055	30,055	1,080	5,400	29,470	35,950
1922 to 30th June ..	92,350	..	16,133	16,133	3	3,265	11,975	15,243

(ii) *Marine Board of Launceston.* (a) *General.* The Marine Board of Launceston consists of five wardens elected by the ratepayers of the city of Launceston. The jurisdiction of the Board extends from Cape Portland along the north coast of Tasmania to Badger Head. The chief work carried out has been to deepen the channel of the River Tamar to 16 feet and to maintain the wharves. An important work, for which investigations have been made and which is to be commenced in 1923, is the removal of Porpoise Rock, which lies 4 miles from the entrance to the river. It is also proposed to establish a deepwater port at Bell Bay and to extend the wharfage accommodation at Launceston.

(b) *Finances.* The following table gives details for the years 1918 to 1922 :—

MARINE BOARD OF LAUNCESTON.—FINANCES, 1918 TO 1922.

Year.			Total Capital Debt.	Capital Debt Tamar Improvement.	Revenue.	Expenditure.
			£	£	£	£
1918	..	..	223,039	166,801	35,094	32,639
1919	..	..	231,539	184,301	33,748	30,238
1920	..	..	263,718	216,480	39,569	40,865
1921	..	..	303,861	256,822	44,421	45,688
1922	..	..	318,361	271,322	47,638	40,021

(iii) *Marine Board of Burnie.* The length of the breakwater is 1,250 feet, with a depth alongside up to 42 feet at low water. There are three timber wharves, 600 feet, 610 feet, and 400 feet long respectively. Owing to the working of the Marine Act 1921, the financial year now ends on the 30th June, and the receipts for the half-year ending 30th June, 1922, were £9,810, and the expenditure £14,554, including £11,000 interest on construction loans.

(iv) *Other Boards and Trusts.* In addition to the three Marine Boards mentioned above, there are four Marine Boards and three Harbour Trusts, which have control of the smaller ports and harbours.

(v) *Financial Summary.* The total receipts and expenditure of the ten marine Boards and Harbour Trusts for the years 1917 to 1921 are shown in the following table :—

MARINE BOARDS AND HARBOUR TRUSTS, TASMANIA.—FINANCIAL SUMMARY, 1917 TO 1921.

Year.			Receipts.				Expenditure.
			Taxes, Rents, etc.	Government and Loans.	Other.	Total.	
			£	£	£	£	£
1917	..	..	61,370	35,734	7,648	104,752	103,715
1918	..	..	64,426	898	15,156	80,480	90,543
1919	..	..	73,485	998	15,552	90,035	100,298
1920	..	..	85,845	5,154	83,412	174,411	207,378
1921	..	..	109,363	3,867	4,957	118,187	116,358

§ 7. Fire Brigades.

1. *New South Wales.*—(i) *General.* Under the Fire Brigades Act of 1909, a Board of Fire Commissioners consisting of five members was formed and fire districts established. The cost of maintenance of fire brigades is borne in equal proportions by the Government, the municipalities, and the insurance companies concerned, but the expenditure must be so regulated that the proportion payable by the councils in a fire district must not exceed the amount obtainable from a farthing in the pound rate on the unimproved capital value of the district.

(ii) *Sydney Fire District.* (a) *Plant, etc.* The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of 258 square miles. On the 31st December, 1922, the Board had under its control in this district 67 stations, 315 permanent men, 167 partially-paid firemen, 3 steam and 60 motor fire engines, 14 horses, 141,867 feet of hose, and 542 telephone fire-alarms. The length of wire used for telephone lines was 1,340 miles.

(b) *Finances.* The subjoined table shows the receipts and disbursements of the Board for the past five years in respect of the Sydney Fire District :—

SYDNEY FIRE DISTRICT.—FINANCES, 1918 TO 1922.

Year.	Receipts.						Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.	Total.	
	£	£	£	£	£	£	£
1918	34,231	34,231	33,858	373	3,950	106,643	107,104
1919	34,198	34,198	33,819	379	4,339	106,933	115,637
1920	47,808	47,808	47,218	589	3,815	147,238	143,262
1921	54,355	54,355	53,820	535	6,457	169,522	163,528
1922	53,979	53,979	53,425	554	4,745	166,682	163,750

2. *Victoria.*—(i) *General.* The Fire Brigades Act of 1915 provides for a Metropolitan Fire Brigades Board, and a Country Fire Brigades Board, each consisting of nine members, with local committees in country districts. The income of each Board is derived in equal proportions from the Treasury, the municipalities, and insurance companies.

(ii) *Metropolitan Fire Brigades Board.* (a) *Plant, etc.* On the 30th June, 1922, this Board had under its control 41 stations, 271 permanent men, 130 partially-paid firemen, 50 special-service firemen, 5 motor drawn steam fire engines, 8 petrol motor fire pumps, 57 other petrol motor appliances, 2 steam fire engines, 96,397 feet of hose, and 363 fire-alarm circuits having 1,092 street fire alarms, 1,072 containing telephones.

(b) *Finances.* The following table gives particulars as to the financial operations of the Board during each year from 1917–18 to 1921–22 inclusive :—

**METROPOLITAN FIRE BRIGADES BOARD, VICTORIA.—FINANCES,
1918 TO 1922.**

Particulars.	1918.	1919.	1920.	1921.	1922.
RECEIPTS.					
	£	£	£	£	£
Contributions	84,418	85,569	95,225	117,893	125,685
Receipts for services	6,645	7,197	9,651	10,807	21,857
Interest and sundries	1,960	2,766	3,593	11,797	3,926
Total	93,023	95,532	108,469	140,497	151,468
EXPENDITURE.					
	£	£	£	£	£
Salaries	58,900	60,915	67,060	85,537	87,523
Interest and sinking fund	13,610	14,971	12,970	14,100	21,136
Other expenditure	25,057	20,968	26,963	41,859	46,198
Total	97,567	96,854	106,993	141,496	154,857

(iii) *Country Fire Brigades Board.* (a) *Plant, etc.* At the end of the year 1922 there were 112 municipal councils and 92 insurance companies included in the operations of the Act. The brigades are composed chiefly of volunteers, but in the large centres a few

permanent station-keepers and watchmen are employed. There were 137 registered brigades and 2,454 registered firemen at the end of the year 1922. The equipment included 22 motor tenders, 3 steam fire engines, and numerous manual engines and hose reels.

(b) *Revenue and Expenditure.* The following table shows the revenue and expenditure of the Country Fire Brigades Board for the years 1918 to 1922 :—

COUNTRY FIRE BRIGADES BOARD, VICTORIA.—REVENUE AND EXPENDITURE, 1918 TO 1922.

Particulars.			1918.	1919.	1920.	1921.	1922.
			£	£	£	£	£
Revenue	..	..	13,923	15,585	18,816	19,995	22,718
Expenditure	..	..	14,552	15,308	18,544	20,353	23,122

3. *Queensland.*—(i) *General.* The Act of 1920 made provision for the retention of existing fire districts, and for the constitution of new districts. For each district there must be a Fire Brigades Board consisting of seven members, and the cost of maintenance of each brigade is proportioned as follows :—The Treasurer two-sevenths, insurance companies three-sevenths, and local authorities two-sevenths. All volunteer fire brigades must be registered.

(ii) *Fire Brigades Boards.* (a) *Plant, etc.* At the end of the year 1921 there were fire brigades in 27 towns, with a total strength of 112 permanent men, 261 partly paid, and 85 voluntary. The plant included 13 motor, 5 steam, and 13 manual fire engines, 71 hose reels, consisting of 16 motor, 10 horse, and 45 hand reels, and 85,909 feet of hose. The total number of call points was 266. The Metropolitan Fire Brigade protects an area of 32 square miles and has a staff of 136 men.

(b) *Revenue and Expenditure.* In the following table are given the revenue and expenditure of all the fire brigades in Queensland for the years 1917 to 1921 :—

FIRE BRIGADE BOARDS, QUEENSLAND.—REVENUE AND EXPENDITURE, 1917 TO 1921.

Year.	Revenue.				Expenditure.			
	From Government.	From Local Authorities.	From Insurance Companies.	Total.	Salaries and Wages.	Buildings, Repairs, etc.	Plant, Stores, etc.	Total.
	£	£	£	£	£	£	£	£
1917 ..	9,919	9,971	9,764	30,893	16,846	1,588	4,573	27,921
1918 ..	10,901	11,093	10,857	33,931	20,037	1,252	3,889	30,430
1919 ..	12,135	12,162	12,266	38,356	23,090	4,937	4,938	38,641
1920 ..	13,724	13,320	20,330	48,573	28,583	4,499	7,793	56,306
1921 ..	14,637	14,524	22,313	54,685	31,513	3,866	8,856	55,263

4. *South Australia.*—(i) *General.* The Fire Brigades Act of 1913 provides for a Board of five members, and the expenses and maintenance of brigades are defrayed as to three-ninths by the Treasury, four-ninths by insurance companies, and two-ninths by the municipalities concerned.

(ii) *Fire Brigades Board.* (a) *Plant, etc.* At the end of 1922 there were altogether 21 fire brigade stations. The strength of the brigades consists of 105 permanent firemen and 66 auxiliary firemen. The plant consists of 5 steam fire engines, 1 motor engine, 21 motor hose carriages, 1 floating fire engine, 4 hose reels, 9 horses, and 61,830 feet of hose

(b) *Revenue and Expenditure.* The following table shows the revenue of the Board for the years 1918 to 1922, the expenditure in each year being the same:—

FIRE BRIGADES BOARD, SOUTH AUSTRALIA.—REVENUE, 1918 TO 1922.

Heading.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Revenue	27,952	31,129	33,568	35,817	37,306

5. **Western Australia.**—(i) *General.* Under the 1916 Act every municipal or road board district is constituted a fire district under the control of the Western Australian Fire Brigades Board. The income of the Board is derived as to two-eighths from Government, three-eighths from municipalities, and three-eighths from insurance companies.

(ii) *Western Australian Fire Brigades Board.* (a) *Plant, etc.* The whole of the brigades throughout the State are now controlled by the Western Australian Fire Brigades Board, and number forty-two. The staff at the 31st December, 1921, included a chief officer, deputy chief officer, third officer, motor engineer, electrical engineer, 7 other officers, 70 permanent, 33 partially-paid, and 573 volunteer firemen. The plant comprised 7 steam, 3 motor and 4 manual engines, 39 reels, and 75,200 feet of hose.

(b) *Finances.* The following table gives details for the years 1917 to 1921:—

WESTERN AUSTRALIAN FIRE BRIGADES BOARD.—FINANCES, 1917 TO 1921.

Year ended 31st December—	Revenue.	Expenditure.	Estimated Value.	
			Land and Buildings.	Plant.
	£	£	£	£
1917	32,243	32,329	52,500	27,500
1918	27,247	31,042	52,500	27,600
1919	26,299	28,557	52,000	27,600
1920	30,100	33,423	49,000	26,000
1921	40,630	35,511	46,840	26,000

6. **Tasmania.**—(i) *General.* The municipal council of any municipality may, under the Act of 1920, petition the Governor to proclaim the municipality or any portion of it to be a fire district, each district to have a Board of five members. The expenses of each Board are borne in equal proportions by contributions from the Treasurer, the municipalities concerned, and insurance companies insuring property within the district.

(ii) *Hobart Fire Brigade Board.* (a) *Plant, etc.* At the end of 1922 the staff consisted of 11 permanent and 17 partially-paid firemen. There were at that date also 1 motor pump, two motor hose carriages, 3 horse and 4 hand reels, and 4 ladders.

(b) *Revenue and Expenditure.* The revenue for the years 1921 and 1922 amounted to £4,581 and £4,803 respectively, expenditure being the same for each year.

CHAPTER V.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction.

1. General.—A comprehensive description of the land tenure systems of the several States was given in Official Year Book No. 4 (pp. 235 to 333), while later alterations were referred to in subsequent issues. In this chapter a summary is given of the principal features of existing land legislation together with some account of the various tenures under which Crown lands may be taken up at the present time. Special paragraphs are devoted to the settlement of returned soldiers on the land, the tenure of land by aliens, and advances by the State Governments to settlers. Particulars as to the areas of land alienated in each State and similar matter are also included.

2. State Land Legislation.—The legislation in force relating to Crown lands, Closer Settlement, Returned Soldiers' Settlement, and other matters dealt with in this chapter is summarized in the following conspectus:—

STATE LAND LEGISLATION, 1923.

New South Wales.	Victoria.	Queensland.
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CROWN LANDS ACTS.

Crown Lands Act 1913–1919: Western Lands Act 1901–1919.	Land Act 1915–1921.	Land Act 1910–1922.
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CLOSER SETTLEMENT ACTS.

Closer Settlement Act 1904–1919.	Closer Settlement Act 1915–1922.	Closer Settlement Act 1906–1917.
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MINING ACTS.

Mining Act 1906–1921.	Mines Act 1915–1921.	Mining Act 1898–1920 : Mining for Coal and Mineral Oil Act 1912 : Petroleum Act 1915 : Miners' Homestead Leases Act 1913–1921.
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RETURNED SOLDIERS' SETTLEMENT ACTS.

Returned Soldiers' Settlement Act 1916–1922.	Discharged Soldiers' Settlement Act 1917–1921.	Discharged Soldiers' Settlement Act 1916–1923.
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ADVANCES TO SETTLERS ACTS.

Government Savings Bank Act 1906–1920 : Returned Soldiers' Settlement Act 1916–1922.	State Savings Bank Act 1915– 1922 : Primary Products Ad- vances Act 1919–1922 : Closer Settlement Act 1915–1922 : Fruit Act 1915–1920 : Dis- charged Soldiers' Settlement Act 1917–1921.	State Advances Act 1916 : Co- operative Agricultural Pro- ducts and Advances to Farmers Act 1914–1919.
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3. **Federal Territory Land Legislation.**—In the Northern Territory, the legislation relating to Crown land is embodied in the Crown Lands Ordinance 1923, that relating to Mining in the Northern Territory Mining Act 1903, the Gold Dredging Act 1899, the Tin Dredging Ordinance 1911–1920, and the Mineral Oil and Coal Ordinance 1922–1923; and that relating to Advances to Settlers in the Advances to Settlers Ordinance 1913. In the Federal Capital Territory, the Ordinances relating to Crown lands are the Leases Ordinance 1918–1919, and the City Leases Ordinance 1921.

STATE LAND LEGISLATION, 1923—*continued.*

South Australia.	Western Australia.	Tasmania.
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CROWN LANDS ACTS.

Crown Lands Act 1915–1919 : Pastoral Act 1904–1922.	Land Act 1898–1920.	Crown Lands Act 1911–1923.
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CLOSER SETTLEMENT ACTS.

Crown Lands Act 1915–1919.	Agricultural Lands Purchase Act 1909–1922.	Closer Settlement Act 1913–1920.
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MINING ACTS.

Mining Act 1893–1922 : Gold Dredging Act 1905.	Mining Act 1904–1921 : Sluicing and Dredging for Gold Act 1899.	Mining Act 1917–1921.
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RETURNED SOLDIERS' SETTLEMENT ACTS.

Discharged Soldiers' Settlement Act 1917–1922.	Discharged Soldiers' Settlement Act 1919.	Returned Soldiers' Settlement Act 1916–1923.
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ADVANCES TO SETTLERS ACTS.

State Advances Act 1895–1922 : Advances to Settlers on Crown Lands Act 1914–1916 : Loans to Producers Act 1917–1921 : Agricultural Graduates Land Settlement Act 1922 : Crown Lands Act 1915–1919 : Irriga- tion Act 1922 : Pastoral Act 1904–1922 : Discharged Sol- diers' Settlement Act 1917– 1922.	Agricultural Bank Act 1906–1921.	State Advances Act 1907–1923 : Advances to Fruit-growers Act 1918–1921 : Closer Settlement Act 1913–1920 : Returned Sol- diers' Settlement Act 1916– 1923.
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4. Administration and Classification of Crown Lands.—In each of the States there is a Lands Department under the direction of a responsible Cabinet Minister who is charged generally with the administration of the Acts relating to the alienation, occupation and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralized by the division of the States into what are usually termed Land Districts, in each of which there is a Lands Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a local Land Board or a Commissioner for each district or group of districts. In the Northern Territory a Land Board, under the control of the Commonwealth Minister for Home and Territories, is charged with the general administration of the Lands Ordinance and of Crown lands in the Northern Territory. In the Federal Capital Territory the administration of the Leases Ordinances is in the hands of the Commonwealth Minister for Home and Territories.

Crown lands are generally classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, therefore, as well as the amount of purchase money or rent, and the conditions as to improvements and residence, vary considerably. The administration of special Acts relating to Crown lands is in some cases in the hands of a Board under the general supervision of the Minister, e.g., the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States and in the Northern Territory there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licences of Crown lands for mining and auxiliary purposes.

5. Classification of Tenures.—(i) *General.* The tabular statement which follows shows the several tenures under which Crown lands may be acquired or occupied in each State. In the Northern Territory perpetual leases of pastoral and agricultural land are granted, as well as miscellaneous leases, and grazing and occupation licences. The mining leases and holdings are similar to those of the States. In the Federal Territory only city leases and leases of other land are issued.

(ii) *Free Grants, Reservations and Dedications.* The modes of alienation given in this category include all free grants either of the fee-simple or of leases of Crown lands. Reservations and dedications are also dealt with therein. At present land is not granted in fee-simple without payment except for charitable, educational or public purposes, the practice of granting land free for farms, etc., having been abolished so far back as 1831. Reservations may be either temporary or permanent and may be made for charitable, educational or religious purposes, as well as for forests, mining, etc. Temporary reservations are subject to considerable fluctuations in area by reason of withdrawals, renotifications and fresh reservations.

(iii) *Unconditional Purchase of Freehold.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained by direct purchase, in which the only condition for the issue of the grant is the payment of the purchase-money. No Crown land is now sold in Queensland, in the Northern Territory, or in the Federal Capital Territory. In all the other States sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the Government Gazettes together with particulars as to the upset price and conditions of sale. Usually the purchase may be made either for cash or on credit by deferred payments. Land put up at auction and not sold may generally be purchased by private contract at the upset price. Small areas of Crown lands may also be sold without competition under special circumstances.

(iv) *Acquisition of Freehold by way of Conditional Purchase.* In this class are included all tenures (except tenures under Closer Settlement and Returned Soldiers' Settlement Acts) in which the issue of the grant is made after the fulfilment of certain conditions as to residence or improvements or both, in addition to the payment of the purchase-money, which is usually paid in instalments. This system is in force in all the States, except

Queensland, but not in the Territories. Though there is considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule, a lease or licence for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money, the freehold is conveyed to him.

(v) *Leases and Licences under Land Acts.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement or Returned Soldiers' Settlement Acts) for a term of years under leases and licences issued by the Lands Departments. The freehold cannot be obtained under these forms of tenure, but in some instances, such tenures may be converted into conditional purchase tenures. Leases and licences are issued in all the States and Territories, and in some of them leases are granted in perpetuity, the only condition being the payment of the annual rent, though in certain cases conditions as to residence and improvements must be fulfilled in the earlier years. Comparatively large areas may be leased or occupied under licence for pastoral purposes.

(vi) *Closer Settlement.* In all the States Acts have been passed authorizing the Government to repurchase alienated lands for the purpose of dividing them into blocks of suitable size and throwing them open to settlement on easy terms and conditions. In some States, private land may be acquired compulsorily as well as by agreement with the owners. As a rule land so acquired is open for selection under conditional purchase in the States in which such system exists, though small blocks are also sold by auction or otherwise, notably in areas set apart as town sites.

(vii) *Leases and Licences under Mining Acts.* Under the Mining Acts of the various States leases of Crown lands may be granted for mining purposes of all kinds, as well as small areas for residence, business purposes, or miners' homesteads. In addition to the payment of rent, it is necessary, in order to prevent a mining lease from being forfeited, that such lease be either kept continuously worked with the number of men fixed by regulation, or, in some States, that a certain sum of money be expended annually thereon. A condition of continuous residence is generally attached to a business or residence area or to a miner's homestead area. In the case of both leases and areas, exemption from labour or residence conditions for periods up to six months at a time can be obtained upon good cause being shown. Provision is also made in the Mining Acts or in special Acts by which a person may obtain a mining lease of land which has already been alienated in fee-simple, with certain reservations. It is generally necessary for a person to obtain a miner's right before being allowed to take up a lease, or a residence or homestead area.

(viii) *Settlement of Returned Soldiers and Sailors.* In all the States provision has been made for the settlement of returned soldiers and sailors on the land, special Acts having been passed for that purpose. Generally, these Acts are administered by the Minister for Lands, and the details are carried out by the various Closer Settlement and other similar Boards, where such exist. The provisions of the Acts usually apply to any person who enlisted for service abroad, and has been discharged, when such discharge was not due to misconduct or incapacity resulting from his own default. Land is set apart exclusively for returned soldiers and sailors under the Closer Settlement and Crown Lands Acts, with modifications in the terms and conditions under which such land is held.

(ix) *Tenure of Land by Aliens.* In several States the holding of land by aliens or unnaturalized persons is restricted, but there is no uniformity in the legislation on the subject. A brief résumé of the restrictions is given in paragraph 9.

(x) *Advances to Settlers.* In all the States and in the Northern Territory provision has been made for advancing money, either out of consolidated revenue or from loans, to settlers for the purpose of acquiring land, removing encumbrances from their holdings, purchasing stock, erecting buildings, making improvements, etc. Advances are also made in some States for the erection or acquisition of cool stores, fruit canneries and similar establishments. The authorities entrusted with the task of making these advances are not the same in all States. In some, the State Savings Bank is the authority; in others, a special Agricultural Bank, the Closer Settlement Board, or the Treasurer, or two or more thereof.

Special arrangements have been made for loans to soldier settlers, the money for this purpose having been provided by the Commonwealth Government and distributed by the State Governments.

STATE CROWN LANDS—TENURES.

New South Wales.	Victoria.	Queensland.
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FREE GRANTS, RESERVATIONS AND DEDICATIONS.

Free Grants : Reservations.	Free Grants : Reservations.	Free Grants : Reservations.
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UNCONDITIONAL PURCHASE OF FREEHOLD.

Auction Sales : After-Auction Purchases : Special Purchases : Improvement Purchases : Purchases of Town Leases, Suburban Holdings, Residential Leases, Week-end Leases.	Auction Sales.	..
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ACQUISITION OF FREEHOLD BY WAY OF CONDITIONAL PURCHASE.

Residential Conditional Purchases : Non-residential Conditional Purchases : Additional Conditional Purchases : Conversions into Conditional Purchases.	Residential Selection Purchase Leases : Non-residential Selection Purchase Leases : Licences of Auriferous worked-out Lands : Conditional Purchase Leases of Swamp or Reclaimed Lands : Selection Purchase Leases of Mallee Lands : Murray River Settlements : Special Settlement Areas : Conversions into Selection Purchase Leases.	..
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LEASES AND LICENCES UNDER LAND ACTS.

Conditional Leases : Conditional Purchase Leases : Special Conditional Purchase Leases : Homestead Selections : Homestead Farms : Settlement Leases : Special Leases : Annual Leases : Scrub Leases : Snow Leases : Inferior Lands Leases : Crown Leases : Improvement Leases : Occupation Licences : Leases of Town Lands : Suburban Holdings : Week-end Leases : Residential Leases : Leases in Irrigation Areas : Western Lands Leases : Forest Leases : Forest Permits.	Perpetual Leases : Auriferous Lands Leases : Leases of Swamp or Reclaimed Lands : Perpetual Leases of Swamp or Reclaimed Lands : Grazing Licences : Perpetual Mallee Leases : Miscellaneous Leases and Licences : Bee Farm Licences : Bee Range Area Licences : Eucalyptus Oil Licences : Forest Leases : Forest Licences : Forest Townships.	Perpetual Lease Selections : Perpetual Lease Prickly Pear Selections : Pastoral Leases : Preferential Pastoral Leases : Occupation Licences : Special Leases : Grazing Selections : Auction Perpetual Leases.
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CLOSER SETTLEMENT.

Sales by Auction : After-auction Sales : Closer Settlement Purchases : Permissive Occupancies : Closer Settlement Promotion.	Sales of Land : Conditional Purchase Leases : Conditional Purchase Leases in Mountainous Areas.	Perpetual Lease Selections : Perpetual Town, Suburban and Country Leases.
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LEASES AND LICENCES UNDER MINING ACTS.

Holdings under Miners' Rights : Gold Mining Leases : Mineral Leases : Coal and Oil Mining Leases : Business Licences : Residence Areas.	Holdings under Miners' Rights : Gold Mining Leases : Mineral Leases : Business Areas : Residence Areas.	Holdings under Miners' Rights : Licences to Search for Petroleum : Licences to Prospect for Coal or Mineral Oil : Gold Mining Leases : Mineral Leases : Business Areas : Residence Areas : Miner's Homestead Perpetual Leases :
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SETTLEMENT OF RETURNED SOLDIERS AND SAILORS.

Returned Soldiers' Special Holding Purchases : Returned Soldiers' Group Purchases : Returned Soldiers' Special Holding Leases.	(Same Tenures as under the Land and Closer Settlement Acts).	Perpetual Lease Selections : Perpetual Town and Suburban Leases.
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STATE CROWN LANDS—TENURES—*continued*.

South Australia.	Western Australia.	Tasmania.
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FREE GRANTS, RESERVATIONS, AND DEDICATIONS.

Free Grants : Reservations.	Free Grants : Reservations.	Free Grants : Reservations.
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UNCONDITIONAL PURCHASE OF FREEHOLD.

Auction Sales.	Auction Sales : Conversion of Town and Suburban Leases into Freehold.	Auction Sales : After-auction Sales : Sales of Land in Mining Towns.
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ACQUISITION OF FREEHOLD BY WAY OF CONDITIONAL PURCHASE.

Agreements to Purchase : Special Agreements to Purchase : Homestead Blocks : Pinnaroo Railway Blocks.	Conditional Purchases with Residence : Conditional Purchases without Residence : Conditional Purchases by Direct Payment : Conditional Purchases of Land for Vineyards, etc. : Conditional Purchases by Pastoral Lessces : Conditional Purchases of Grazing Lands : Homestead Farms : Village Allotments : Workingmen's Blocks : Special Settlement Lands.	Selections for Purchase : Additional Selections for Purchase : Homestead Areas : Selections in Mining Areas : Sales by Auction : Sales by Private Contract : After-auction Sales : Special Settlement Areas.
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LEASES AND LICENCES UNDER LAND ACTS.

Perpetual Leases : Special Perpetual Leases : Homestead Blocks : Miscellaneous Leases : Grazing and Cultivation Leases : Licences : Licences of Resumed Land : Pastoral Leases : Leases to Discoverers of Pastoral Country : Special Leases to Discoverers of Water : Irrigation Blocks : Town Allotments in Irrigation Areas : Forest Leases.	Pastoral Leases : Special Leases : Leases of Town and Suburban Lands : Irrigation Leases : Forest Permits : Forest Leases.	Grazing Leases : Pastoral Leases : Leases of Land covered with Button grass, etc. : Leases of Mountainous Land : Miscellaneous Leases : Temporary Licences : Occupation Licences : Residence Licences : Business Licences : Forest Leases, Licences and Permits.
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CLOSER SETTLEMENT.

Sales by Auction : Agreements to Purchase : Miscellaneous Leases.	Conditional Purchases : Town and Suburban Areas.	Leases with Right of Purchase : Special Sales.
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LEASES AND LICENCES UNDER MINING ACTS.

Holdings under Miners' Rights : Search Licences : Occupation Licences : Gold Leases : Mineral Leases : Business Areas : Residence Areas.	Holdings under Miners' Rights : Gold Mining Leases : Mineral Leases : Mineral Oil Leases : Business Areas : Residence Areas : Miners' Homestead Leases.	Holdings under Miners' Rights : Prospectors' Licences : Gold Mining Leases : Mineral Leases.
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SETTLEMENT OF RETURNED SOLDIERS AND SAILORS.

Perpetual Leases : Special Leases.	Ordinary Tenure : Special Tenure.	Free Grants : Ordinary Tenure : Special Tenure.
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§ 2. Free Grants, Reservations, and Dedications.

1. **New South Wales.**—(i) *Free Grants.* Crown lands may, by notification in the *Gazette*, be dedicated for public purposes and be granted therefor in fee-simple. Such lands may be placed under the care and management of trustees, not less than three in number, appointed by the Minister.

(ii) *Reservations.* Temporary reservations of Crown lands from sale or lease may be made by the Minister.

(iii) *Areas Granted and Reserved, 1921–22.* During the financial year 1921–22, the total area for which free grants were prepared was 1,034 acres, including grants of 1,024 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 525 acres were dedicated and permanently reserved, the number of separate dedications being 75.

On the 30th June, 1922, the total area temporarily reserved was 19,487,014 acres, of which 5,520,880 acres were for travelling stock, 3,249,141 acres for forest reserves, 818,052 acres for water, 1,351,232 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

2. **Victoria.**—(i) *Free Grants.* The Governor may grant, convey or otherwise dispose of Crown lands for public purposes.

(ii) *Reservations.* The Governor may temporarily or permanently reserve from sale, lease or licence any Crown lands required for public purposes and may except any area of Crown lands from occupation for mining purposes or for residence or business under any miner's right or business licence.

(iii) *Areas Granted and Reserved.* During the year 1921, 182 acres were granted without purchase and reservations of both a permanent and temporary nature, comprising a net area of 13,638 acres, were made. At the end of 1921, the total area reserved was 7,316,441 acres, consisting of roads, 1,762,090 acres; water reserves, 316,880 acres; agricultural colleges, etc., 85,590 acres; permanent forests and timber reserves under Forests Act, 4,123,000 acres, forests and timber reserves under Land Acts, 329,600 acres; reserves in the Mallee, 397,881 acres; and other reserves, 301,400 acres.

3. **Queensland.**—(i) *Free Grants.* The Governor may grant in trust any Crown land, which is or may be required for public purposes. Under the Irrigation Act, land to be used for the purpose of any undertaking under that Act may be vested in fee-simple in the Irrigation Commission.

(ii) *Reservations.* The Governor may reserve from sale or lease, either temporarily or permanently, any Crown land which is or may be required for public purposes. Reserved lands may be placed under the control of trustees who are empowered to lease the same for not more than 21 years with the approval of the Minister.

Under the State Forests and National Parks Act, the Governor may permanently reserve any Crown Lands and declare them to be a State Forest or a National Park.

(iii) *Areas Granted and Reserved.* During the year 1922, eight free grants were issued, the total area thereof being 10 acres. During the same period the area of reserves cancelled was 750,982 acres less than the area set apart as reserves. The total area reserved up to the end of 1922 was 16,179,762 acres, made up as follows :—timber reserves, 2,972,697 acres; State forests and national parks, 1,563,904 acres; for use of aborigines, 5,609,768 acres; and general, 6,033,393 acres.

4. **South Australia.**—(i) *Free Grants.* The Governor may dedicate Crown lands for any public purpose and grant the fee-simple of such lands, with the exception of foreshores and land for quays, wharves or landing-places, which are inalienable in fee-simple from the Crown.

(ii) *Reservations.* The Governor may reserve Crown lands for (a) the use and benefit of aborigines, (b) military defence, (c) forest reserves, (d) railway stations, (e) park lands, or (f) any other purpose that he may think fit.

(iii) *Areas Granted and Reserved.* During the year 1922 free grants were issued for a total area of 504 acres. During the same year reserves comprising 21,502 acres were proclaimed. At the end of 1922 the total area reserved was 281,475 acres.

5. Western Australia.—(i) *Free Grants.* The Governor may grant Crown land in fee-simple for public purposes.

(ii) *Reservations.* The Governor may reserve Crown lands for public purposes and may place such reserves under the control of a local authority as trustees, or may lease the same for 999 years, to secure the use thereof for the purpose for which the reserve was made. Reserves not immediately required may be leased from year to year.

(iii) *Areas Granted or Reserved.* During the year 1922, no fresh areas of land were granted in fee-simple, but 120,888 acres were reserved for various purposes.

6. Tasmania.—(i) *Free Grants.* The only mention in the Crown Lands Act respecting free grants of land is that the Governor may agree with the Governor-General of the Commonwealth for the grant of any Crown land to the Commonwealth, and it is expressly stated that no lands may be disposed of as sites for religious purposes except by way of sale under the Act.

(ii) *Reservations.* The Governor in Council may except from sale or lease and reserve to His Majesty any Crown land for public purposes and vest for such term as he thinks fit any land so reserved in any person. Any breach or non-fulfilment of the conditions upon which such land is reserved renders it liable to forfeiture. A school allotment, not exceeding 5 acres in area, may also be reserved.

(iii) *Areas Granted or Reserved.* During the year ended 31st December, 1922, the area granted free was 16,333 acres, nearly all of which was granted to soldiers under the Returned Soldiers' Settlement Act, while during the same year, eleven free leases were issued to local public bodies for municipal purposes, and 158,500 acres were reserved, of which 158,000 acres were reserved for scenery preservation, 1 acre for hall-site purposes, 26 acres for recreation purposes, and 56 acres as a stock-resting reserve. The total area reserved from sale and selection to the end of 1922 was 4,980,000 acres.

7. Northern Territory.—(i) *Reservations.* The Governor-General may resume for public purposes any Crown lands, not subject to any right of or contract for purchase, and may reserve, for the purpose for which they are resumed, the whole or any portion of the land so resumed.

(ii) *Areas Reserved.* The area of land held under reserve at the end of 1922 was 35,790 square miles.

§ 3. Unconditional Purchases of Freehold.

1. New South Wales.—(i) *Auction Sales.* Crown lands, not exceeding in the aggregate 200,000 acres in any one year, may be sold by public auction in areas not exceeding half-an-acre for town lands, 20 acres for suburban lands, and 640 acres for country lands, at the minimum upset price of £8, £2 10s., and 15s. per acre respectively. At least 10 per cent. of the purchase-money must be paid at the time of sale, and the balance within three months, or the Minister may allow the payment of such balance to be deferred for a period not exceeding ten years, 5 per cent. interest being added. Town blocks in irrigation areas may also be sold by auction.

(ii) *After-auction Purchases.* In certain cases, land offered at auction and not sold may be purchased at the upset price, but one-quarter of the purchase-money must be paid immediately, and the balance as notified in the *Gazette*. Any such application is, however, subject to the approval of the Minister.

(iii) *Special Purchases.* Under certain circumstances, land may be sold in fee-simple, the purchaser paying the cost of survey and of reports thereon, in addition to the purchase-money.

(iv) *Improvement Purchases.* The owner of improvements in authorized occupation by residence under any Mining or Western Lands Act of land within a gold field or mineral field may purchase such land without competition at a price determined by the local land board, but at not less than £8 per acre for town lands or £2 10s. per acre for other lands. The area must not exceed one-quarter acre within a town or village, or two acres elsewhere, and no person may purchase more than one such area within three miles of a similar prior purchase by him.

(v) *Purchases of Residential Leases.* A holder of a residential lease (including any additional residential lease) may, after the expiration of the first five years of his lease, apply to purchase the land held thereunder. The local land board fixes the price and reports to the Minister, who may either grant or refuse the application. No person may hold more than one such purchase.

(vi) *Purchases of Week-end Leases and Town Lands Leases.* The holder of a week-end lease or of a town lands lease may apply to purchase the land comprised therein, and the Minister may either grant or refuse such application. The price is the capital value of the land at the date of application and is determined by the local land board. The purchase money must be paid within three months or within such further period as the Minister may determine.

(vii) *Purchases of Suburban Holdings.* The land contained within a suburban holding may, with the consent of the Minister, be purchased by the holder thereof, on payment of the purchase-money in ten equal annual instalments with $2\frac{1}{2}$ per cent. interest. The value of the land is fixed by the local land board, and the purchase is subject to the condition of residence on the land for five years from the date of taking up the suburban holding. No transfer of land so purchased may be made without the consent of the Minister.

(viii) *Areas Sold by Auction and Special Purchases.* During the year ended 30th June, 1922, the total area sold was 2,955 acres, of which 241 acres were sold by auction and 546 acres after having been withdrawn from auction, while 51 acres were sold as improvement purchases and 2,117 acres as special purchases. The amount realized for the sale of the whole area was £22,116.

2. **Victoria.**—(i) *General.* Lands specially classed for sale by auction may be sold by auction in fee-simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey fee at the time of the sale, together with a deposit of $12\frac{1}{2}$ per cent. of the whole price; the residue is payable in equal half-yearly instalments with interest. Any unsold land in a city, town or borough, areas specially classed for sale, isolated pieces of land not exceeding 50 acres in area, and sites for churches or charitable purposes, if not more than 3 acres in extent, may be sold by auction on the same terms. Swamp or reclaimed lands may also be sold by auction, subject to the condition that the owner keeps open all drains, etc., thereon.

(ii) *Areas Sold at Auction and by Special Sales.* During the year 1921, a total of 1,564 acres was disposed of under this tenure, 628 acres being country lands, while 630 acres of town and suburban lands were sold by auction, and 306 acres at special sales.

3. **Queensland.**—Since the end of 1916, land, not already conditionally acquired, cannot be alienated to selectors in fee-simple.

4. **South Australia.**—(i) *Sales by Auction.* The following lands may be sold by auction for cash:—(a) special blocks, (b) Crown lands which have been offered for lease and not taken up within two years, (c) town lands, and (d) suburban lands, which the Governor excepts from the operations of the Land Board. A purchaser must pay 20

per cent. of the purchase-money in cash, and the balance within one month or within such extended time as the Commissioner of Crown lands may allow. Town lands may be sold subject to the condition that they cannot be transferred or mortgaged for six years.

(ii) *Areas Sold, etc.* During the year ended 30th June, 1921, the area of town lands sold by auction was 90 acres. In addition 45,664 acres were sold at fixed prices, and the purchases of 50,475 acres on credit were completed, making a total of 96,229 acres.

5. *Western Australia.*—(i) *Sales by Auction.* Town and suburban lands may be sold by auction in lots. The purchaser must pay 10 per cent. of the purchase-money immediately, and the balance within twelve months in four equal quarterly instalments in the case of town and suburban lands other than for cultivation, and in the case of suburban lands for cultivation, within five years in half-yearly instalments. Suburban lots must be fenced within two years, and suburban lots for cultivation must, in addition, be planted with fruit trees, vines or vegetables to the extent of one-tenth of the area, or one-quarter thereof must otherwise be cultivated. On payment of a fee of thirty shillings, provided conditions have been fulfilled, the Crown grant is issued.

(ii) *Conversion of Town or Suburban Leases into Freehold.* Where a person has purchased by auction a ninety-nine years' lease of a town or suburban lot, he may, at any time during the currency thereof, surrender the lease and obtain in lieu the fee-simple at a price to be fixed by the Minister for Lands.

(iii) *Areas Sold.* During the year ended 30th June, 1922, the area of town and suburban allotments sold was 2,212 acres in 744 allotments.

6. *Tasmania.*—(i) *Sales by Auction.* Town lands may be sold by auction for cash or on credit, no conditions being imposed beyond the payment of the purchase-money. No town land, the price of which is less than £15, may be sold on credit.

(ii) *After-auction Sales.* Town lands, not within 5 miles of any city, which, after having been offered at auction, have not been sold, may be sold at the upset prices by private contract.

(iii) *Sales of Land in Mining Towns.* Any town land in a mining area may be sold by auction for cash, provided that any person, being the holder of a residence licence or business licence, in lawful occupation of a residence area or business area and the owner of permanent improvements of a value equal to or greater than the upset price, is entitled to purchase such area at the upset price, prior to the sale by auction. The upset price of the unimproved value must not be less than £10 and the area must not exceed half-an-acre.

(iv) *Areas Sold.* During the year ended 31st December, 1922, the area sold by auction or by special sale amounted to 4,037 acres, as against 827 acres for the previous year.

4. Acquisition of Freehold by way of Conditional Purchase.

1. *New South Wales.*—(i) *Residential Conditional Purchases.* Crown lands, not within certain areas, and not leased or reserved, are open to conditional purchase at the price of 20s. per acre, if not otherwise gazetted. The maximum area which may be conditionally purchased is 1,280 acres in the Eastern Division, and 2,560 acres in the Central Division, and the minimum area is 40 acres. In a special area, the areas are such as are gazetted. These areas may, however, be exceeded in certain circumstances by additional holdings out of areas set apart for the purpose in order to make up a home maintenance area. Every application must be accompanied by a deposit of 5 per cent. of the price of the land, together with the amount of survey fee or an instalment thereof, and the necessary stamp duty. The balance of the purchase-money is payable in instalments of 5 per cent. of the price of the land with $2\frac{1}{2}$ per cent. interest, such instalments

and interest being payable annually after the end of the third year from the date of application. The following conditions are attached to the holding :—(a) the holder must reside thereon for five years, (b) the boundaries must be fenced within three years after the confirmation of the application, and such fence must be maintained for a period of five years from such confirmation ; or, alternatively, (c) improvements must be made within three years to the value of not less than 6s. per acre and within five years 10s. per acre, but the value of such improvements need not exceed £384 or 30 per cent. of the value of the land within three years, and £640 or 50 per cent. within five years. A Crown grant in fee-simple is issued when all the conditions have been complied with, and the balance of the purchase-money and stamp duty and deed fee have been paid.

(ii) *Non-residential Conditional Purchases.* Crown lands, which are open to ordinary conditional purchase, may be conditionally purchased without the condition of residence subject to the following conditions :—(a) the area must not exceed 320 acres, (b) the applicant must be not less than 21 years of age, (c) no person, except with the consent of the Minister, may make a subsequent purchase, except as an additional conditional purchase which, together with the original purchase, must not exceed 320 acres, (d) the price is double that payable for the same land as a residential purchase, and the deposit is 2s. for each pound of purchase money, the balance of which is payable after the third year in annual instalments of 2s. per pound or of 9d. in the pound of the full purchase-money with $2\frac{1}{2}$ per cent. interest, and (e) the boundaries must be fenced within twelve months and not less than £1 per acre expended within five years on other permanent improvements. Fencing may be dispensed with subject to other approved improvements being effected to the value of 30s. per acre within five years after confirmation of the application.

(iii) *Additional Conditional Purchases.* An applicant or holder of an original conditional purchase and a holder of a freehold (not in the Western Division) containing not less than 40 acres, and which does not constitute a home maintenance area, may, subject to certain conditions, apply for an additional conditional purchase, but the whole area contained in the original purchase and in the additional purchase together must not exceed that allowed for an ordinary conditional purchase, and is subject to the same conditions.

(iv) *Conversions of Leases into Conditional Purchases, etc.* (a) The holder of a conditional lease may convert the whole or part of the land comprised therein into an additional conditional purchase.

(b) A conditional purchase lease may be converted into a conditional purchase on payment of 5 per cent. deposit on the capital value of the land and the balance in equal annual instalments of 5 per cent. of the purchase-money with interest at $2\frac{1}{2}$ per cent. Such conditional purchase is subject to all the unfulfilled conditions of the lease, except that of the payment of rent. It may also be converted into a homestead farm.

(c) A non-residential conditional purchase may be converted into an ordinary conditional purchase, the period of residence being reduced by the period resided, if any, under the former holding.

(d) The holder of a special lease or of an agricultural or pastoral lease granted under the Church and School Lands Dedication Act may apply to convert his holding into a conditional purchase or an additional conditional purchase, or into certain other specified tenures.

(e) A homestead selection or homestead farm may be converted into a conditional purchase subject to any special provisions attached to the original holding, and to the general provisions respecting conditional purchases. The term of residence is reduced by the period of continuous residence on the original holding. The deposit and payment of purchase-money are the same as in the conversion of a conditional purchase lease (see (b)). A homestead selection or homestead farm may also be converted into a conditional purchase lease or a conditional purchase with an associated conditional lease.

(f) The holder of a Crown lease or of a settlement lease may convert such lease into a conditional purchase, provided that the total area held by the applicant and his wife does not exceed that of a home maintenance area. Where such area is in excess of a home maintenance area, the non-convertible part may be held as a conditional lease. The terms of payment and conditions are the same as in other cases of conversion.

(v) *Areas Alienated as Conditional Purchases.* At the 30th June, 1922, the total number of conditional purchases in existence was 75,540, covering an area of 18,437,590 acres. The following table gives particulars of conditional purchases from 1917-18 to 1921-22 :—

CONDITIONAL PURCHASES, NEW SOUTH WALES, 1917-18 TO 1921-22.

Year ended 30th June—	Applications made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year.	To end of Year.
		Acres.	Acres.	Acres.	Acres.	Acres.
1918	271	32,085	121	16,211	388,338	17,318,124
1919	511	75,370	201	24,911	559,779	17,877,903
1920	773	126,179	257	35,612	686,385	18,564,288
1921	533	90,573	480	78,461	664,522	19,228,810
1922	311	59,878	424	70,233	741,263	19,970,073

2. *Victoria.*—(i) *Residential Selection Purchase Leases.* A person may select from land notified in the *Gazette* as available, a selection purchase lease, the maximum area of which ranges from 200 acres of first class land to 2,000 acres of Class 4A land. The annual rental varies from one shilling per acre in the case of first class land to two and two-fifths of a penny in the case of Class 4A land, for a period of twenty years, or half those rates for forty years. Certain specified conditions must be complied with and improvements effected during the first six years, and the selector is required to reside on the property for five years and may not transfer the same during the first six years. At any time after the expiration of six years, provided that all the conditions have been fulfilled, and the balance of the purchase money has been paid, a Crown grant may be obtained.

(ii) *Non-residential Selection Purchase Leases.* These leases are similar to the preceding with the exceptions that (a) the provision for payment during forty years is omitted, (b) there is no residential condition, and (c) the value of the improvements to be effected is double that of those on a residential lease.

(iii) *Licences of Worked-out Auriferous Lands.* A person may obtain a licence to occupy an allotment of not more than 5 acres of worked-out auriferous lands for a period not exceeding seven years and to a depth of not more than 50 feet, at a rental of not less than one shilling per acre per annum. Such licences contain conditions prescribed by the Governor. If the licensee has complied with all the conditions of his licence for a period of seven years he is entitled to a Crown grant on payment of the purchase-money which is fixed by the Board of Land and Works at not less than £1 per acre, from which is deducted the amount paid in licence fees.

(iv) *Conditional Purchase Leases of Swamp or Reclaimed Lands.* A conditional purchase lease of swamp or reclaimed lands covers such term as may be agreed upon between the lessee and the Board of Land and Works, and provides for the payment of the value of the allotment with interest at the rate of $4\frac{1}{2}$ per cent., by sixty-three half-yearly instalments. The lessee must keep open all drains, etc., and make improvements to the value of ten shillings per acre in each of the first three years, but need not reside on the land.

(v) *Selection Purchase Leases of Mallee Lands.* The terms and conditions attached to these leases are the same as those attached to ordinary selection purchase leases, but the areas may be larger, ranging from 640 acres of first class land to 4,000 acres of Class 4A land. The lessee must also, within two years, clear and cultivate at least one-fourth of his holding, and make provision for the storage of water.

(vi) *Murray River Settlements.* Crown lands near the River Murray may be subdivided into allotments not exceeding 50 acres each and taken up as conditional purchase leases. The value of the land is payable in sixty-three half-yearly instalments with not less than $4\frac{1}{2}$ per cent. interest. Residential and improvement conditions are laid down, and after twelve years, if they have been complied with, a Crown grant may be obtained

(vii) *Special Settlement Areas.* Crown land, upon which expenditure has been made by the Crown, may be set apart as a special settlement area, and surveyed into allotments not exceeding 200 acres each. Such allotments may be taken up as conditional purchase leases, but every Crown grant contains a condition that the land shall at all times be maintained and used for the purpose of agriculture, and the holder must reside thereon.

(viii) *Conversion of Perpetual Leases into Selection Purchase Leases.* A perpetual lease may, with the consent of the Board of Land and Works, be surrendered by the lessee, and a selection purchase lease (residential or non-residential) obtained in lieu thereof.

(ix) *Conversion of Auriferous Lands Licences into Selection Purchase Leases.* If the Minister of Mines consents, the Board may grant to the licensee of an auriferous lands licence a selection purchase lease in lieu thereof, provided that the land is improved to the value of £1 per acre and the occupation is *bona fide*.

(x) *Areas Purchased Conditionally.* The subjoined table gives particulars of the areas selected conditionally from 1917 to 1921 :—

AREAS PURCHASED CONDITIONALLY, VICTORIA, 1917 TO 1921.

(EXCLUSIVE OF SELECTION IN THE MALLEE COUNTRY.)

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
With residence	69,210	61,884	76,003	79,461	72,752
Without residence	19,462	12,093	6,635	23,050	26,767
Total	88,672	73,977	82,638	102,511	99,519
No. of selectors	646	526	698	710	431

3. **Queensland.**—The granting of freehold tenure having been abolished at the end of 1916, only those lands which are held under any form of conditional purchase tenure granted before the beginning of 1917 can be converted into freehold. Land cannot be taken up under any form of conditional purchase.

4. **South Australia.**—(i) *Agreements to Purchase.* Crown lands (except town lands) which have been surveyed or of which the boundaries have been delineated in the public maps, may be offered on agreement to purchase. The area which is to be cleared and rendered available for cultivation, and the payments to be made, are notified in the *Gazette*. An application must be accompanied by a deposit of an amount equal to the first half-yearly instalment of purchase money. The whole purchase money is payable in sixty equal half-yearly instalments of not less than 2 per cent. thereof. Preference is given in allotting land to the applicant who agrees to reside on the land for nine months in each year. If no application is made within three months from the date of notification, the Commissioner may offer the land at a reduced price. No agreement may be granted to any person in the case of land the unimproved value of which exceeds £5,000, nor in such manner that the purchaser would hold lands under any tenure, except pastoral lease, of which the aggregate unimproved value would exceed that sum, excepting in cases where the land is suitable for pastoral purposes only, under which circumstances no agreement to purchase is granted if the carrying capacity of the unimproved land and of all other lands held by the applicant would exceed 5,000 sheep, or, if outside Goyder's line of rainfall, 10,000 sheep. The purchaser must fence in the land within five years and comply with specified conditions respecting improvements, and, after six years, if all the conditions have been complied with and the balance of the purchase money paid, may complete the purchase.

(ii) *Special Agreements to Purchase.* Where the Commissioner directs, the following provisions for payment are made :—(a) No instalments are payable during the first four years ; (b) from the end of the fourth to the end of the tenth year, each instalment is to be at the rate of 2 per cent. of the value of the land, and is to be regarded as interest only ;

(c) from the end of the tenth year, the interest included in the instalments is at the rate of 4 per cent. on the value of the land; and (d) the agreement is for forty years, and the purchase money is to be paid in sixty half-yearly instalments at the rate of £2 16s. 5d. for every £100 of the purchase money, including interest, the payment of such instalments to commence after the end of the tenth year.

(iii) *Homestead Blocks.* Any Crown lands and any lands which the Commissioner may acquire as suitable for homestead blocks may be surveyed and offered as homestead blocks, provided that the unimproved value of the fee-simple of a block does not exceed £100 and that no block is sold for a sum less than the amount paid therefor by the Government, together with the cost of offering the same. A homestead block may be held under an agreement to purchase, but only by a person gaining his livelihood by his own labour, and the holder must reside thereon for nine months in each year. Such a block may be protected from encumbrance or seizure, if endorsed by the Commissioner as a "Protected Homestead Block."

(iv) *Pinnaroo Railway Blocks.* Land set apart under the Pinnaroo Railway Act may be sold under agreement with a covenant to purchase at the price fixed by the Land Board, with interest at 2 per cent. per annum, in sixty half-yearly instalments.

(v) *Lands Allotted.* The following table gives the areas of the lands allotted under Agreements to Purchase, exclusive of lands for Soldier Settlement, during the five years 1917-18 to 1921-22. No Homestead Blocks have been allotted during that period.

AGREEMENTS TO PURCHASE, SOUTH AUSTRALIA, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
Eyre's Peninsula Lands ..	50,926	54,661	46,958	89,052	65,277
Murray Lands	46,587	23,174	28,906	48,625	34,606
Pinnaroo Lands	13,023	40,744	36,507	30,166	15,834
Closer Settlement Lands ..	13,524	14,472	25,720	6,176	25,255
Homestead Lands (repurchased) ..	..	..	5	72	9
Other Crown Lands	17,444	11,213	9,022	42,642	6,875
Total	141,504	144,264	147,118	216,733	147,856

5. *Western Australia.*—(i) *General.* Agricultural land is divided into two classes, cultivable and non-cultivable. The maximum area which may be held by any one person is 2,000 acres of the former or 5,000 acres of the latter, or the equivalent of the two classes mixed. A wife may, in addition, hold half the above area. Under discretionary powers contained in the Land Act, the Minister for Lands has temporarily limited the area of cultivable land to 1,000 acres for a man and his wife.

(ii) *Conditional Purchases with Residence.* Land under this tenure may be disposed of subject to the following conditions :—(a) The price is fixed by the Governor, the minimum being three shillings and ninepence per acre, and the maximum (except with special approval) fifteen shillings per acre, together with the cost of survey; (b) the lease is from twenty to thirty years; (c) the maximum area allowed is 1,000 acres, and the minimum, except in approved cases, 100 acres; (d) 7 per cent. of the survey fee must be paid annually for the first five years of the lease, and the balance thereof with interest and the purchase money is to be paid over the balance of the term; (e) the lessee must reside on the land for six months in each year for the first five years; (f) the lessee must expend on prescribed improvements an amount equal to one-fifth of the purchase money in every two years for the first ten years, and fence one-half of the holding within five years and the whole within ten years; and (g) at any time after five years, provided that the conditions have been complied with and the full purchase money paid, the Crown grant will be issued.

(iii) *Conditional Purchases without Residence.* Land may be disposed of without the residence condition, subject to the covenant that the amount to be expended on improvements must be a sum equal to the purchase money, with 50 per cent. added thereto.

(iv) *Conditional Purchases by Direct Payment.* Land may also be disposed of without residence conditions, subject to the following :—(a) The price is fixed by the Governor, but at not less than ten shillings per acre, in addition to the cost of survey, payable within twelve months or sooner ; (b) the application must be accompanied by a deposit of 10 per cent. of the purchase money, and, if accepted, a licence is granted for seven years ; (c) the licensee must fence in the whole of the land within three years, and an amount, equal to ten shillings per acre, in addition to the exterior fencing, must be expended on the prescribed improvements ; and (d) when all improvements have been effected and the purchase money paid, the Crown grant will issue.

(v) *Conditional Purchases of Land for Vineyards, Orchards, and Gardens.* The Governor may declare any Crown lands open for selection for vineyards, orchards, and gardens, subject to the following conditions :—(a) The price must be not less than ten shillings per acre, in addition to the survey fee ; (b) 10 per cent. of the purchase money must be deposited with the application, and the balance paid in six half-yearly instalments ; (c) a licence is issued for three years ; (d) the maximum area which may be held by one person is 50 acres, and the minimum, except in special cases, 5 acres ; (e) the licensee must within three years fence in the whole of the land and plant at least one-tenth thereof with vines or fruit trees or cultivate one-tenth as a vegetable garden ; and (f) on completion of the conditions and payment of the purchase money, a Crown grant will issue.

(vi) *Conditional Purchases by Pastoral Lessees.* A pastoral lessee in the South-West Division may select an area not exceeding one-twentieth of the area leased by him. The maximum area which may be so held is 2,000 acres, and the minimum, except in special cases, 200 acres. Similarly, a pastoral lessee in the Kimberley, North-West, Eastern or Eucla Divisions, not being within a goldfield, who has in his possession at least ten head of sheep or one head of large stock for each thousand acres, may select 1 per cent. of the total area held by him, the maximum area which may be so selected being 2,000 acres, and the minimum 500 acres.

The conditions are the same as those for a conditional purchase with residence. The minimum price can be fixed as low as one shilling per acre if the land is infested with poison plants.

(vii) *Conditional Purchases of Grazing Lands.* The Governor may declare any lands situated in the South-West, Central or Eucla Divisions open for selection under the following conditions :—(a) The price must be not less than one shilling per acre, if the prescribed cost of survey be paid with the application. No further payment need be made for five years, and then the purchase money must be paid in equal half-yearly instalments over the balance of the lease, which will have a term of from twenty to twenty-five years ; (b) the maximum area which can be held by any one person is 5,000 acres, and the minimum 100 acres ; (c) the lessee, or his agent or servant, must reside on the land for six months in the first year, and for nine months in each of the succeeding four years. The lessee must expend on improvements an amount equal to one-fifth of the purchase money in every two years for the first ten years, and fence in the whole area during the first ten years ; and (d) at any time after five years, provided the conditions have been complied with and the purchase money has been paid, the Crown grant may issue.

(viii) *Homestead Farms.* Crown lands in the South-West, Eucla and Central Divisions, not being within a goldfield, may be made available for "Homestead Farms." Any person, not being the holder of more than 100 acres of freehold or conditional purchase land, and being a male or the head of a family, is entitled to a homestead farm of not more than 160 acres or less than 10 acres, on payment of a fee of £1 and the prescribed cost of survey, interest on which is payable at the rate of 7 per cent. for the first five years, and the cost thereof in four half-yearly instalments over the last two years of the occupation certificate, which is issued for a term of seven years. Neither the land nor the interest of the selector therein is liable to be taken in execution until the issue of the Crown grant. A selector must reside on the land for six months in each year for the first five years, and within two years expend not less than four shillings per acre on the total area ; within five years an amount equal to ten shillings per acre, and within seven years a sum equal to fourteen shillings per acre in improvements, and must fence in one-half of the land within five years and the whole within seven years. At any time after five years from the date of the occupation certificate, provided the conditions have been complied with, a Crown grant will issue, or, a Crown grant may issue after twelve months, provided the conditions have been complied with, on payment of five shillings per acre.

(ix) *Village Allotments.* In connexion with any land set apart for selection as homestead farms, the Governor may declare any land within 5 miles thereof a village site, and such site may be subdivided into allotments not exceeding in area 1 acre each. Any selector of a homestead farm may select an allotment in such village without payment. As soon as the selector is entitled to a Crown grant of his homestead farm, he may, on payment of £1 and the prescribed fee, obtain a Crown grant of his village allotment. The provisions of the Act in regard to residence shall then apply to the village allotment instead of to the homestead farm.

(x) *Working Men's Blocks.* Land may be set apart for working men's blocks and subdivided into lots not exceeding half-an-acre each on a goldfield, or five acres elsewhere. Any person who is not already an owner of land in freehold or on conditional purchase, may obtain a lease under the following conditions:—(a) The price must be not less than £1 per acre, payable at the rate of one-tenth of the purchase money annually; (b) one person may hold one allotment only; (c) the application must be accompanied by the first instalment of purchase-money, and, if approved, a lease for ten years is issued; (d) the lessee must reside on the block for nine months in each of the first five years; (e) the land must be fenced in within three years, and improvements, in addition, made within five years equal in value to double the purchase-money; and (f) after five years a Crown grant must be issued, provided all conditions are complied with and the purchase money and fee paid.

(xi) *Special Settlement Lands.* Land may be set apart as special settlement lands, and may be cleared, drained, or otherwise improved, and disposed of under the provisions of any preceding tenure.

(xii) *Areas Alienated.* The following table shows the number of holdings and the areas conditionally selected for which Crown grants were issued and conditionally alienated during the years ending 30th June, 1918 to 1922. Under the heading "Deferred payments (with residence)" are included conditional purchases of grazing lands.

CONDITIONAL PURCHASES.—WESTERN AUSTRALIA, 1918 TO 1922.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
NUMBER OF HOLDINGS.					
	No.	No.	No.	No.	No.
Crown Grants Issued ..	946	872	1,416	1,269	1,995
Conditionally Alienated ..	973	1,136	2,622	2,220	3,275

AREAS FOR WHICH CROWN GRANTS WERE ISSUED.

	Acres.	Acres.	Acres.	Acres.	Acres.
Free Homestead Farms ..	45,770	42,888	113,630	65,286	112,798
Conditional Purchases ..	126,642	100,237	129,207	435,387	287,669
Poison Land Leases ..	3,977	..	..	..	..

AREAS CONDITIONALLY ALIENATED.

	Acres.	Acres.	Acres.	Acres.	Acres.
Conditional Purchases—					
(i) Deferred Payments (with Residence) ..	477,396	496,694	1,143,240	1,460,085	1,635,911
(ii) Deferred Payments (without Residence) ..	43,951	49,766	114,094	131,331	139,602
(iii) Direct Payments (without Residence) ..	597	840	127	363	721
Free Homestead Farms ..	21,818	24,059	53,550	65,285	78,310
Working Men's Blocks ..	..	..	5	10	38
Total ..	543,762	571,359	1,311,016	1,657,074	1,854,582

6. *Tasmania*.—(i) *Selections for Purchase*. Rural land is classified into (a) first class land if its value is £1 an acre or over, (b) second class land if less than £1 but not less than 10s. an acre, and (c) third class land, if less than 10s. and not less than 5s. an acre, provided that no Crown land within the area and during the currency of a pastoral lease may be sold at less than 10s. per acre. Any person may select for purchase (a) one lot of first class land, not exceeding 200 acres nor less than 15 acres, on payment of a small deposit and the balance of the purchase money in instalments spread over eighteen years, provided that he is not the holder upon credit of any first class land or of any unclassified rural land, for which the whole of the purchase money has not been paid, or (b) at the value per acre fixed by the Surveyor-General one lot of second class land, not exceeding 300 acres nor less than 30 acres, provided that he is not the holder upon credit of any second class land for which the whole of the purchase-money has not been paid, or (c) at the value per acre fixed by the Surveyor-General, one lot of third class land, not exceeding 600 acres nor less than 60 acres, provided that he is not the holder upon credit of any third class land for which the whole of the purchase-money has not been paid. The terms of purchase are as follows :—a sum equal to one-third of the price is added thereto by way of premium allowed for credit, and the whole sum is payable by a small deposit in the case of (a) or by a deposit of one-fortieth part thereof in the case of (b) and (c), and the balance in eighteen and fourteen annual instalments respectively. The following conditions must be observed :—(a) a purchaser of first class land must during eight consecutive years improve the land to the extent of two shillings and sixpence per acre annually, and the land must be occupied for five years either by himself, a member of his family, or someone employed by him, and (b) on second and third class land, improvements must be effected during five consecutive years to the value of one shilling per acre annually.

(ii) *Additional Selections for Purchase*. Any selector for purchase may make a further selection and purchase under the same terms and conditions, provided that the total area held by him does not exceed the maximum allowed for each class of land.

(iii) *Homestead Areas*. Any person who is not the holder on credit of any land may select and purchase at the price fixed one lot of first class agricultural land, not exceeding 50 acres nor less than 15 acres. The purchase money is payable by a deposit at the time of selection and the balance in eighteen years in instalments, but no instalments are payable for the first, second, and third years. The purchaser must occupy the land within four years for a period of five years, and during that period effect improvements to the value of £1 per acre.

(iv) *Selections in Mining Areas*. Any person may select and purchase in a mining area one lot of first class land, not exceeding 100 acres, on the condition that two shillings and sixpence be expended per acre per annum on improvements for eight years. The price is fixed by the Surveyor-General. Land within 1 mile of a town may be selected and purchased only in lots of not less than 10 acres nor more than 20 acres. The residence condition is for three years, to be commenced within two years.

(v) *Sales by Auction*.—(a) *Town Lands*. Town lands may be sold by auction on credit, in which case one-third of the purchase-money is added thereto as interest. One fourteenth of the purchase-money so increased must be paid at the time of sale, and the balance in thirteen annual instalments. Improvements must be made within five years to the value of a sum equal to the purchase-money, otherwise such land and any improvements thereon are liable to be forfeited.

(b) *Rural Lands*. Rural lands may be sold by auction for cash or on credit. After survey and before sale such lands must be classified into first class, second class, and third class lands, with the following minimum upset prices—first class, £1 per acre ; second class, 10s. per acre ; and third class, 5s. per acre. Lots of less than 15 acres of first class land may be sold only for cash. When sold on credit, one-third of the purchase-money is added thereto as interest, and one-fortieth of the whole must be paid as deposit, and the balance in fourteen annual instalments. Whether sold for cash or on credit, the same conditions of residence and improvements apply as in the case of land selected for purchase.

(c) *Lands within Mining Areas*. Crown land in mining areas, not selected under (iv) above, may be sold by auction for cash or on credit, having been previously surveyed into lots of (a) not more than 100 acres nor less than 10 acres of first class land ; (b) not less than 30 acres of second class land ; and (c) not less than 50 acres of third class land.

No land within 1 mile of a town may be sold as second class land. The upset price may not be less than £1 per acre for first class land, 10s. per acre for second class, and 5s. per acre for third class land. The usual conditions as to improvements apply, and first class land must be occupied for at least three years.

(vi) *After-auction Sales.* Town lands, not within 5 miles of a city, rural lands, and lands within a mining area, which have been offered for sale by auction and not sold, may be sold at the upset price by private contract under the same conditions as if sold by auction.

(vii) *Sales by Private Contract.* Where any second class Crown land, being less than 30 acres in area, and not contiguous to or adjacent to any other Crown land, is so situated as to make it desirable that the same should be sold, it may be sold either on credit privately on the same terms as second class lands or by public auction. In either case, the ordinary conditions as to the improvements on the land apply.

(viii) *Special Settlement Areas.* The Commissioner of Lands may withdraw from selection any area of rural land not less than 1,000 acres in extent which is first class land suitable for agriculture, horticulture, or dairy farming, together with adjacent inferior land, and may expend money in improving the same and subdividing it into blocks. Such blocks may be submitted to auction under the ordinary conditions applicable to first class land, or, without having been so submitted (a) may be declared to be open to any person; or (b) may be reserved for *bona fide* immigrants to the extent of one block in every six, for purchase by private contract at such price as the Commissioner may think fit, the purchase money being spread over eighteen years. The usual conditions as to residence and improvements apply also to these blocks.

(ix) *Areas Conditionally Purchased.* The following table shows the areas alienated absolutely under systems of conditional purchases and sales on credit, and also the areas sold conditionally and the applications for conditional purchases received and confirmed, during the years 1917 to 1921:—

TASMANIA.—CONDITIONAL PURCHASES, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Completion of Conditional Purchases</i> ..	35,646	52,764	80,134	102,857	76,055
<i>Sold Conditionally—</i>					
Selections for Purchase	21,686	24,796	24,084	32,248	52,455
Homestead Areas	90	90	40	40	50
Auction Sales on Credit	2,782	859	769	2,028	1,400
Town and Suburban Allotments ..	515	675	412	733	1,614
Total	25,073	26,420	25,305	35,049	55,519
<i>Applications—</i>					
Received	913	1,499	1,212	1,836	966
Confirmed	344	350	437	524	498

§ 5. Leases and Licences under Land Acts.

1. *New South Wales.*—(i) *Conditional Leases.* Any applicant for or holder of a conditional purchase may apply for a conditional lease of Crown lands adjoining his property, provided that the area of the conditional lease does not exceed three times the area of the conditional purchase. The term of the lease is forty years, and the annual rent is determined by the local land board for three periods of fifteen, fifteen and ten years respectively. Pending determination, the provisional rent is fixed at two pence per acre. The conditions of residence and improvements are the same as those attached to a conditional purchase (see § 4 (i)) and a conditional lease may be converted into an additional conditional purchase.

(ii) *Conditional Purchase Leases.* A conditional purchase lease may be granted in a classified area set apart for such leases. The areas of the blocks, and the capital values, are determined by the Minister. The term of a lease is forty years, divided into two consecutive periods of fifteen years and one of ten years. The annual rent is $2\frac{1}{2}$ per cent. of the capital value. Five years' residence is necessary and special conditions must be complied with. A holder of an original conditional purchase lease may apply for an additional conditional purchase lease to be held under the same conditions, provided that no applicant may hold a greater area than would substantially exceed a home-maintenance area. At any time a conditional purchase lease may be converted into a conditional purchase or a homestead farm.

(iii) *Special Conditional Purchase Leases.* A special conditional purchase lease must not exceed an area of 320 acres. A deposit of rent at the rate of sixpence per acre must be made at the time of application, and, in addition to the conditions attached to a conditional purchase lease, the lessee must, within three years, effect improvements to the value of from ten shillings to one pound per acre as the Minister may determine. The lease, moreover, may be converted into a conditional purchase.

(iv) *Homestead Selections.* A classified area may be set apart for disposal by way of original homestead selection in blocks not exceeding 1,280 acres. The value and conditions as to drainage, clearing, etc., are as notified in the Gazette. Residence for five years is requisite, and a dwelling house valued at not less than £20 must be erected within eighteen months. The rent for the first five years is $1\frac{1}{4}$ per cent. of the capital value, and thereafter $2\frac{1}{2}$ per cent. thereof. After five years, provided that all the conditions have been fulfilled, a homestead grant is issued, and then an annual rent equal to $2\frac{1}{2}$ per cent. of the capital value is payable in perpetuity, such capital value being re-determined every twenty-five years. The condition of residence may, if the local land board is satisfied, be performed by an approved deputy, but, under such circumstances, the rent is raised to $3\frac{1}{2}$ per cent. of the value, and the value of the dwelling house to £40, while, within three years, not less than one-tenth of the lease must be in full tillage, and, during the fourth and fifth years, one-fifth must be in full tillage. An additional homestead selection may be applied for by the holder of or the applicant for an original homestead selection under similar conditions to those applicable to an original selection. A homestead selection may be converted into a conditional purchase. Practically no lands are now set apart under this tenure.

(v) *Homestead Farms.* A classified area may be subdivided into farms of such areas as the Minister may determine to be home-maintenance areas. Such farms are leased in perpetuity at a rental of $2\frac{1}{2}$ per cent. of the capital value, which, after the expiration of twenty-five years, is re-appraised every twenty years. Residence is obligatory for five years, and the holder may, during the first five years, in lieu of paying rent, expend during each year a sum equal to not less than the amount of rent in effecting improvements. The holder of an original homestead farm may, in order to make up a home-maintenance area, apply also for an additional homestead farm under similar conditions. A homestead farm may be converted into a conditional purchase.

(vi) *Settlement Leases.* A classified area may be set apart for disposal by way of original settlement lease. Such lease, where the land appears suitable for agriculture, must not exceed 1,280 acres, or where suitable chiefly for grazing, 10,240 acres. A standard is adopted which permits the lessee to establish and maintain a home by the use of the land. The term of the lease is forty years, divided into two periods of fifteen years and one of ten years. The annual rent for the first period is as gazetted, and for subsequent years is as determined by the local land board on application by the lessee. The lessee must reside on the land for five years, fence it within that period, and conform to any regulations regarding noxious animals and weeds. The holder may apply for a homestead grant of a portion of the lease and may also apply for an additional settlement lease, subject to the notified conditions, but the term of such additional lease expires upon the termination of the original lease. The holder may also convert his lease into a conditional purchase. Practically no lands are now set apart under this tenure.

(vii) *Special Leases.* Special leases may be granted for a period not exceeding 28 years for (a) wharves and jetties; (b) miscellaneous purposes, including grazing,

agriculture and business purposes, up to 1,920 acres; or (c) tramway or irrigation purposes, not exceeding three chains in width without any limit in length. The rent is determined by the local land board. A special lease may be converted into certain specified tenures.

(viii) *Annual Leases for Pastoral Purposes.* Crown lands may be offered in areas not exceeding 1,920 acres on annual lease by auction or by tender, or may be applied for in the prescribed manner, the rent being fixed by the local land board. The holder of such lease may apply for a lease under improvement conditions, and may be granted a lease of an area sufficient for the maintenance of a home for a period not exceeding ten years.

(ix) *Scrub Leases.* Crown lands wholly or partly covered by scrub or noxious undergrowth, may be leased for a term not exceeding 21 years, or up to 28 years, subject to such conditions as the local land board may make for the purpose of destroying the scrub. The term of the lease is divided into such periods as the Minister may determine, and the rent for the second and subsequent periods is fixed by the local land board. A home-maintenance area may be converted into a homestead selection.

(x) *Snow Leases.* Land usually covered by snow for a part of each year may be leased in areas not exceeding 10,240 acres for a period up to fourteen years, but no person may hold more than one such lease.

(xi) *Inferior Lands Leases.* Leases of land of inferior character, or in isolated positions may be granted subject to the terms notified in the Gazette either by tender or sold by auction, or, if no bid is received at auction, on application at the upset price. A home-maintenance area may be converted into a homestead grant during the last year of the lease.

(xii) *Crown Leases.* Crown leases may be disposed of for agriculture or grazing, or for both, in such blocks as the Minister may determine. The term is for 45 years, and the lessee must reside on his lease for five years. The annual rent is $1\frac{1}{4}$ per cent. of the capital value of the land, which is re-appraised every fifteen years. During the last five years of the lease, the holder, unless debarred by notification, may convert an area thereof not exceeding that of a home-maintenance area into a homestead farm. Such lease may be converted into a conditional purchase with or without a conditional lease.

(xiii) *Improvement Leases.* Land which is not suitable for settlement until improved may be leased subject to the following conditions:—(a) the term must not exceed 28 years; (b) the area must not exceed 20,480 acres; (c) the amount bid at auction, or offered by tender, or the upset rent, is to be the annual rent; (d) covenants must be specified for the improvement of the land; and (e) the holder may apply for a homestead grant of a portion of the leasehold, not exceeding a home-maintenance area, and has a tenant-right in the improvements which he has made.

(xiv) *Occupation Licences.* An occupation licence entitles the licensee to occupy Crown lands for grazing purposes, but the licence is only renewable from year to year, and the fees are liable to re-determination annually.

(xv) *Leases of Town Lands.* Crown lands within the boundaries of any town may be leased by auction or tender, such lease being in perpetuity and not subject to any term of residence. The area must not exceed half-an-acre. The value of the land is re-appraised every twenty years, and the rent is fixed at $2\frac{1}{2}$ per cent. of such value. No person may hold more than one lease. The land comprised in such lease may be purchased under certain conditions.

(xvi) *Suburban Holdings.* The Minister may set apart suburban Crown lands, or Crown lands within population boundaries, or within the Newcastle pasturage reserve, or any other Crown land, for disposal by way of suburban holdings. The area of each holding is determined by the Minister, and the title is a lease in perpetuity. Residence for five years is necessary, but the local land board may exempt a holder from this condition for periods not exceeding twelve months. The rent is $2\frac{1}{2}$ per cent. of the

capital value, which is re-appraised every twenty years. An additional suburban holding may be acquired by the holder of an original holding, but no person may hold more than one original holding, except as a mortgagee. A suburban holding may be purchased under certain conditions.

(xvii) *Week-end Leases.* A week-end lease must not exceed 60 acres, and is held in perpetuity. The rent is $2\frac{1}{2}$ per cent. of the capital value, which, after 25 years, is re-appraised every twenty years. No residence condition is attached, but improvements other than fencing must be effected to the value of £1 per acre within five years and any special conditions carried out that may be notified. No person may hold more than one week-end lease except as mortgagee.

(xviii) *Residential Leases.* A holder of a miner's right may, for the purpose of *bona fide* residence, acquire a residential lease on a goldfield or mineral field, provided that :— (a) the area does not exceed 20 acres ; (b) the term does not exceed 28 years ; and (c) the conditions as prescribed are fulfilled. A resident holder of an area on a goldfield or mineral field may similarly hold a residential lease together with the area which he already holds, but the total area of the two together must not exceed 20 acres. A residential lease may be purchased under certain conditions.

(xix) *Leases in Irrigation Areas.* Lands in an irrigation area must be divided into (a) irrigable lands ; (b) non-irrigable lands ; and (c) town lands. The capital values are determined by the Water Conservation and Irrigation Commission. The following are the conditions under which leases are granted :—(a) *Irrigation Farms or Blocks.*—The title is a lease in perpetuity, and the annual rent is $2\frac{1}{2}$ per cent. of the capital value, which, after the expiration of 25 years, is re-appraised every twenty years. A condition of the lease is residence in perpetuity by the holder. (b) *Leases of Non-irrigable Lands.*—Leases of non-irrigable lands may be granted under the same conditions as those of irrigation farms or blocks. (c) *Town Lands Blocks.*—The title to a town lands block is also a lease in perpetuity, subject to the same terms and conditions as a lease of an irrigation farm except that (i) the annual rent must not be less than £1, (ii) the lease is subject to such building and other conditions as the Commission deems desirable, (iii) the condition of residence may be waived, and (iv) three adjoining blocks for the purpose of residence or four for business purposes may be held by one person.

(xx) *Western Lands Leases.* Under the Western Lands Act the Minister may declare Crown lands in the Western Division open for lease, and specify the area and rent. No rental may be less than two shillings and sixpence per square mile nor more than seven pence per sheep on the carrying capacity, and may not be increased by more than 25 per cent. at each re-appraisalment. The successful applicant is notified in the Gazette and must pay the first year's rent within one month after such notification. All leases issued under the Western Lands Act expire not later than the 30th June, 1943, except extended leases.

(xxi) *Forest Permits and Leases.* Under the Forestry Act, permits may be granted (a) to graze and water horses and cattle ; (b) to occupy land as the site of a sawmill or other building, or any tramway, wharf, or timber depot ; (c) to occupy land for charcoal burning or bee farming or other approved purpose ; (d) to occupy land for growing fodder ; and (e) to ringbark or otherwise kill or destroy trees. The fees are prescribed by regulation. Leases of land within State forests may also be granted for grazing or other approved purposes for any term not exceeding twenty years.

(xxii) *Areas Occupied under Leases and Licences.* On the 30th June, 1922, there were 58,214 leases and licences current under the Lands Department and the Western Land Board, comprising 114,554,764 acres of Crown lands. Of these leases 3,056, comprising 75,951,087 acres, are held under the Western Land Acts.

The following table shows the areas which were granted under lease or licence during each year and those held under various descriptions of leases and licences at the end of each of the five years 1917–18 to 1921–22. In the case of permissive occupancies under the Crown Lands Act, the difference between the total areas for each year is given.

**AREAS TAKEN UP UNDER LEASE OR LICENCE.—NEW SOUTH WALES.
1917-18 TO 1921-22.**

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
AREAS TAKEN UP UNDER CROWN LANDS ACT.					
	Acres.	Acres.	Acres.	Acres.	Acres.
Occupation Licences (auction) ..	21,800	42,230	60,330	36,000	201,866
Conditional leases (gazetted) ..	184,093	263,791	221,153	188,478	278
Conditional purchase leases ..	920	361	2,358	1,444	1,292
Settlement leases ..	1,966	5,370	3,460	10,430	79,390
Improvement leases ..	1,280	20,368	3,250	4,045	..
Annual leases ..	114,227	379,302	824,395	324,289	..
Scrub leases ..	3,532	6,615	13,890	22,420	..
Snow leases ..	121,180	3,000	..	..	..
Special leases ..	62,528	68,054	95,444	112,234	182,119
Residential leases ..	1,151	695	491	592	497
Permissive occupancies ..	147,325	209,154	409,365	103,740	36,642
Prickly pear leases ..	1,280	..	600	1,140	48
Crown leases ..	285,248	341,324	593,554	671,247	700,419
Homestead farms ..	89,020	383,833	507,417	437,713	378,180
Suburban holdings ..	3,318	3,226	4,073	6,764	9,121
Week-end leases ..	29	170	76	159	48
Leases of town land ..	..	1	1	51	70
Returned soldiers special holdings	2,177	8,456	9,865	4,872	6,213

AREAS TAKEN UP UNDER WESTERN LANDS ACT.

Leases ..	6,392	1,854,762	1,965,286	2,482,883	2,509,700
Permissive occupancies ..	98,975	1,529,038	38,501	636,451	169,460
Total ..	1,146,441	5,119,750	4,753,509	5,044,952	4,275,343

**AREAS OCCUPIED UNDER LEASE OR LICENCE.—NEW SOUTH WALES,
1917-18 TO 1921-22.**

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral ..	1,136,475	..	..	..	..
Outgoing pastoral leases ..	725,312	677,221	627,833	569,425	435,970
Occupation { (i) Ordinary ..	5,085,034	4,111,467	3,625,750	3,191,614	2,782,896
licences { (ii) Preferential ..	1,159,345	966,613	806,755	738,554	693,212
Homestead leases ..	153,275	51,074	35,687	35,687	15,207
Condit'l { (i) Gazetted ..	14,831,535	14,468,840	14,340,048	14,149,642	14,091,229
leases { (ii) Not gazetted (under provisional rent) ..	39,523	81,735	157,248	137,897	78,622
Conditional purchase leases ..	433,228	408,768	384,868	368,669	322,548
Settlement leases ..	4,571,864	4,479,135	4,248,826	3,973,171	4,032,936
Improvement leases ..	4,355,297	3,962,870	3,688,890	3,288,555	3,177,936
Annual leases ..	2,516,954	2,552,665	2,953,296	2,409,661	1,914,217
Scrub leases ..	1,689,956	1,658,675	1,537,704	1,502,434	1,247,926
Snow leases ..	131,420	134,420	134,424	129,020	126,020
Special leases ..	664,935	663,919	703,673	743,049	828,684
Inferior land leases ..	73,711	71,710	69,710	69,710	68,350
Artesian well leases ..	51,200	..	..	..	..
Blockholders' leases ..	1	1	1	1	..
Residential leases (on gold and mineral fields) ..	13,675	13,511	13,327	12,991	12,541
Church and school lands ..	11	11	11	11	11
Permissive occupancies(b) ..	1,156,416	1,365,570	1,774,935	1,878,675	1,915,317
Prickly pear leases ..	42,558	41,148	37,692	35,932	30,502
Crown leases ..	2,449,587	2,694,879	3,092,904	3,664,798	4,128,533
Homestead farms ..	1,081,622	1,410,612	1,889,109	2,296,848	2,622,756
Suburban holdings ..	38,643	41,227	40,198	45,475	51,071
Week-end leases ..	87	240	281	418	487
Leases of town lands ..	17	17	19	71	139
Returned soldiers' special holdings	2,575	10,952	17,888	20,118	26,567
Western land leases and licences(a)	73,754,817	75,243,327	75,450,265	75,984,447	75,951,087
Total ..	116,159,073	115,110,607	115,631,342	115,246,873	114,554,764

(a) Includes permissive occupancies. (b) Permissive occupancies in the Western Division not included.

2. **Victoria.**—(i) *Perpetual Leases.* A person may take up as a perpetual lease an area of Crown land varying from 600 acres of first class land to 2,880 acres of Class 4A land. The annual rental is fixed by the Board of Land and Works every ten years. Specified improvements must be effected during the first six years, and residence on or within five miles of the land for six months during the first year and for eight months during each of the four following years is necessary, but, if one-fourth of the allotment be cultivated during the first two years and one-half before the end of the fourth year, the residence covenant is not enforced.

(ii) *Auriferous Lands Licences.* Licences may be granted for any period not exceeding one year, entitling the holder to reside on or cultivate auriferous land not comprised within a city or town, and not exceeding in extent twenty acres. The terms and conditions are such as are approved by the Governor. No person may hold more than one licence. After the value of the land has been paid in rent, only a nominal rent is payable.

(iii) *Leases of Swamp or Reclaimed Lands.* Swamp or reclaimed lands may be leased in allotments not exceeding 160 acres, for a term of 21 years, subject to the lessee keeping open all drains, etc., thereon. The rent is fixed according to the value of the land as determined by the Board of Land and Works. The lessee must effect improvements to the value of ten shillings per acre in each of the first three years, but residence on the land is not necessary.

(iv) *Perpetual Leases of Swamp or Reclaimed Lands.* The conditions under which these leases may be taken up are similar to those of ordinary leases, except that the lease is held in perpetuity, and the rent is fixed at 4 per cent. of the value of the land, which is re-appraised every ten years.

(v) *Grazing Licences.* Grazing licences may be granted for a term not exceeding seven years subject to cancellation at any time. In the case of returned soldiers, leases may be granted for fourteen years. The rental varies according to the class of land.

(vi) *Perpetual Leases of Mallee Lands.* Perpetual leases of Mallee land may be granted for areas ranging from 640 acres of first class land to 4,000 acres of Class 4A land. The rent is $1\frac{1}{4}$ per cent. of the value of the land, which is re-appraised every ten years. Residence is necessary during six months of the first year and during eight months in each of the following four years, but the residence condition is waived if one-fourth of the land is cultivated within four years and one-half by the end of the sixth year, or, alternatively, if improvements, ranging in value from ten shillings to two shillings and sixpence per acre, according to the class of land, are effected during the first six years.

(vii) *Miscellaneous Leases and Licences.* Leases up to 21 years at an annual rental of not less than £5, and annual licences at various rates are issued for different purposes, such as sites for residences, gardens, inns, stores, smithies, butter factories, creameries, brickworks, etc. Licensees who have been in the possession of land for five years (if such land is situated outside the boundaries of a city) may purchase the same at a price to be determined by the Board.

(viii) *Bee Farm Licences.* Annual licences for bee farms may be issued for areas of not more than ten acres at such fees as the Minister may fix.

(ix) *Bee-Range Area Licences.* A bee-range licence may be secured on payment of one half-penny for every acre of Crown land within a radius of 1 mile of the apiary, and in connexion therewith all suitable timber may be protected from destruction although held under grazing lease or licence.

(x) *Eucalyptus Oil Licences.* A licence may be granted of land suitable for the growth of trees in connexion with the manufacture or production of eucalyptus oil. The licence is in force for such period and subject to such conditions as may be prescribed.

(xi) *Forest Leases.* Under the Forests Act, a person may obtain, for a term not exceeding twelve years, a lease of Crown land within any reserved forest for (a) the grazing of cattle; (b) sawmilling purposes, but not exceeding 3,000 acres in extent; or (c) any miscellaneous purpose for which a miscellaneous lease may be granted under the Land Act. The rent and conditions are as prescribed.

(xii) *Forest Licences.* Under the same Act, and subject to prescribed conditions, the Forests Commission may grant to any person for any term not exceeding one year

a licence to occupy (a) any area for the grazing of cattle ; (b) a special area, not exceeding 640 acres, for the cutting of timber ; (c) an area, not exceeding one acre, for residence purposes ; or (d) an area for any of the miscellaneous purposes for which a miscellaneous licence may be granted under the Land Act.

(xiii) *Forest Townships.* A sufficient part of any reserved forest may be set apart as a forest township site, and divided into allotments. Such allotments may, upon the prescribed terms and rental, be leased for any term not exceeding twenty years to any person engaged in the forest industry or to any business person, and these leases are renewable.

(xiv) *Areas held under Leases and Licences.* The following statement shows the areas of Crown lands occupied under leases and licences from 1917 to 1921. All grazing area leases expired on the 29th December, 1920 :—

CROWN LANDS UNDER LEASE OR LICENCE.—VICTORIA, 1917 TO 1921.

Tenure.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
Grazing area leases	2,573,143	2,503,197	2,408,481	2,329,343	..
Grazing licences (exclusive of Mallee) ..	4,493,453	5,069,740	5,974,069	6,242,276	6,649,821
Mallee lands	5,028,808	2,796,686	4,931,503	4,908,543	1,680,670
Auriferous lands (licences)	74,032	71,400	68,452	65,590	64,135
Swamp lands (leases)	3,670	3,412	1,759	1,478	1,565
Perpetual leases	7,761	7,559	7,559	7,559	7,559
Perpetual leases under Mallee Lands Acts 1896–1901	202,943	197,253	139,653	141,957	128,684
Total	12,383,810	10,649,247	13,531,476	13,696,746	8,532,434

3. *Queensland.*—(i) *Perpetual Lease Selections.* The area of a perpetual lease selection must not exceed 2,560 acres and is held under a lease in perpetuity. An applicant for such lease, who undertakes to reside on his selection during the first five years of his lease, has priority over other applicants, and further priority is granted to an applicant who, in addition, agrees to cultivate at least one-twelfth of his selection within the first three years. The annual rent during the first fifteen years is $1\frac{1}{2}$ per cent. of the notified capital value, provided that the rent for the second period is a peppercorn (if demanded). The annual rent for each period of fifteen years thereafter is determined by the Land Court at a similar percentage of the unimproved capital value of the land as fixed by that Court.

(ii) *Perpetual Lease Prickly Pear Selections.* The maximum area for a perpetual lease prickly pear selection is 2,560 acres, and the same conditions as to priority apply as in the case of an ordinary perpetual lease selection. The lease is in perpetuity and contains a condition for the destruction of the prickly pear thereon. The rent for the first fifteen years is a peppercorn (if demanded), and for each period of fifteen years thereafter is $1\frac{1}{2}$ per cent. of the unimproved capital value as determined by the Land Court.

(iii) *Pastoral Leases.* The Minister may, by notification in the Gazette, declare any Crown land open for pastoral lease, subject to conditions as to fencing, improvements, and the destruction of noxious weeds. The notification must specify the areas to be leased, the maximum area which one person may hold, the term of the lease, which must not exceed 30 years, and the rent per square mile for the first period of ten years. The rent for the second and third periods of ten years is fixed by the Land Court.

(iv) *Preferential Pastoral Leases.* When an applicant for a pastoral lease on making his application offers that the holding shall be subject to the condition of personal residence during the first five years and undertakes to perform that condition, he has priority over other applicants who have not made such offer. In other respects the conditions are the same as those for an ordinary pastoral lease, but no selector or lessee of a grazing selection, or owner of freehold land of an area of 5,000 acres and upwards, is competent to apply for or hold a preferential pastoral lease.

(v) *Occupation Licences.* Annual licences are granted to occupy Crown lands, either after notification in the Gazette or by the Minister without competition. In the former case the rent is as notified, and in the latter is as fixed by the Minister. Licences expire on the 31st December in each year, but may be renewed from year to year upon payment of the rent on or before the 30th September, and the rent may be increased on or before that date. A licence is determinable on three months' notice.

(vi) *Special Leases.* The Governor may issue a lease of any portion of land for any manufactory, or for any industrial, residential or business purposes, or for any race-course or recreation purposes, for a period not exceeding 30 years upon such conditions as he thinks fit. A lease may also be issued of reserved lands which are infested with noxious weeds or scrub, conditionally on the lessee destroying such noxious plants.

(vii) *Grazing Selections.* Crown land may be leased as grazing selections, but no person may hold a grazing selection or selections exceeding 60,000 acres in the aggregate. Conditions may be imposed for the erection of rabbit-proof or marsupial-proof fencing, and for the destruction of noxious weeds. A grazing selection must be fenced in within three years, and when so fenced, the selector is entitled to a lease. The annual rent for the first seven years is as notified or tendered, and for each succeeding period of seven years is as determined by the Land Court. Grazing selections may be either (a) grazing farms, or (b) grazing homesteads; and when land is declared open for grazing selection it must be available for grazing homesteads only during the first 56 days, after which it may be taken up under either tenure. The lease of a grazing farm is subject to the condition of occupation during the whole term, and that of a grazing homestead to the condition of residence during the whole term.

(viii) *Auction Perpetual Leases.* Perpetual leases of (a) town lands, in areas not exceeding half-an-acre; (b) suburban lands, in areas not exceeding 5 acres; and (c) country lands, in areas not exceeding 640 acres, may be sold by auction to any person, to trustees for religious or charitable bodies, or to companies. Improvements to the value of at least £25 must be effected within two years, and the rent during the first fifteen years is fixed at 3 per cent. of the upset price, or of such greater capital sum as has been bid by the purchaser. For each period of fifteen years thereafter, the rent is 3 per cent. of such unimproved value of the land as is determined by the Land Court. No person may hold more than six town or six suburban leases in any one town or adjacent thereto.

(ix) *Areas taken up under Lease or Licence.* The following table gives particulars of the areas taken up under lease or licence during each of the years 1917 to 1921:—

AREAS TAKEN UP UNDER LEASE OR LICENCE.—QUEENSLAND, 1917 TO 1921.

Tenure.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral leases	2,171,600	6,068,080	4,360,320	4,017,080	1,121,800
Occupation licences	4,880,680	6,658,120	5,321,400	4,274,440	5,994,440
Grazing farms	1,925,059	3,111,716	4,437,564	2,009,034	949,432
Grazing homesteads	2,243,218	2,597,571	2,094,413	2,807,409	1,853,990
Perpetual lease selections	207,581	305,873	609,483	490,546	419,886
Perpetual lease prickly pear selections	141,336	153,151	514,064	435,299	270,985
Auction perpetual leases, Town	107	163	231	142	150
" " " Suburban	168	428	199	262	236
" " " Country	2,599	1,218	607	889	916
Special leases	4,560	15,620	7,478	6,511	11,806
Leases of reserves	18,547	12,341	15,249	39,173	28,190
Total	11,595,455	18,924,281	17,361,008	14,080,785	10,651,831

The following particulars are available respecting leases taken up in 1922:—

Grazing farms	1,306,603 acres.
Grazing homesteads	1,673,724 acres.
Perpetual lease selections	250,518 acres.
Perpetual lease prickly pear selections	154,359 acres.

The gross area held at the end of the year 1922 for purely pastoral purposes was 343,686 square miles.

Five non-competitive perpetual leases were issued during 1922, the total area being 115 acres.

The total areas occupied under lease or licence will be found in a table at the end of this chapter (see § 11.4).

4. **South Australia.**—(i) *Perpetual Leases.* Crown lands (except town lands) which have been surveyed or of which the boundaries have been delineated in the public maps may be offered on perpetual lease. Details concerning the area which is to be cleared and rendered available for cultivation, and the rent to be paid, are notified in the Gazette. An applicant must deposit with his application 20 per cent. of the first year's rent (if any). Preference is given in allotting land to the applicant who agrees to reside on the lease for nine months in each year. If no application is made within three months from the date of notification, the Commissioner may offer the land at a reduced rent. No lease may be granted to any person of lands the unimproved value of which exceeds £5,000, except where the land is suitable for pastoral purposes only, while no lease is granted if the carrying capacity of all the lands held by the lessee would exceed 5,000 sheep, or, if outside Goyder's line of rainfall, 10,000 sheep. The lessee must fence the land within five years, and clear and render available for cultivation not less than one-eighth during the first two years, one-eighth during the second two years, and then one-eighth annually until three-quarters have been so cleared and rendered available for cultivation.

(ii) *Special Perpetual Leases.* Where the Commissioner directs, the following provisions apply respecting the payment of rent :—(a) No rent is payable for the first four years; (b) from the end of the fourth to the end of the tenth year, rent is payable at the rate of 2 per cent. of the value of the land; and (c) thereafter, 4 per cent. of the value of the land is payable in perpetuity.

(iii) *Homestead Blocks.* The conditions applying to these blocks are the same as those for blocks held under agreement to purchase, except that they are leased in perpetuity and cannot be sold. (See § 4.)

(iv) *Miscellaneous Leases.* Leases may be granted for various purposes for any term not exceeding 21 years at such rents and upon such conditions as the Commissioner may determine.

(v) *Grazing and Cultivation Leases.* The Land Board may allot leases of Crown lands for grazing or cultivation purposes or for both, for any term not exceeding 21 years and upon such conditions and at such rentals as the Commissioner may determine.

(vi) *Licences.* Licences may be granted of Crown lands for (a) fishermen's residences and drying grounds, (b) manufactories, fellmongering establishments, slaughter houses, brick or lime kilns or sawmills, (c) depasturing sheep, cattle or other animals, or (d) any other approved purpose. These licences are in force for one year only and are subject to such fees and conditions as the Commissioner may impose.

(vii) *Leases of Resumed Lands.* The Commissioner may resume possession of any well or other place where water has been found, and of not more than 1 square mile of land contiguous thereto, or, in the case of artesian water, 5 square miles. A lease of such land may be offered by private contract or by auction, the original lessee of the land having a preferential right to such lease. The lessee must maintain an accommodation house, if required, and construct facilities for watering stock.

(viii) *Pastoral Leases.* These leases are issued under the Pastoral Acts, and are granted for a term of 42 years. The rent is fixed by the Commissioner of Crown Lands, and is based on the unimproved value, which is re-appraised after the expiration of 21 years. The lessee must expend in improvements such sum not exceeding ten shillings per square mile per annum as is recommended by the Pastoral Board, but this covenant ceases when £3 per square mile has been expended. Conditions as to stocking must also be fulfilled.

(ix) *Leases to Discoverers of Pastoral Country, etc.* Under the same Acts, a person who has discovered pastoral lands or has applied for a lease which has been abandoned for three years or more on account of vermin may obtain a lease for 42 years at a peppercorn rental for the first ten years, at sixpence per square mile for the next ten years, and thereafter at a rent of two shillings per square mile annually.

(x) *Special Leases to Discoverers of Water.* The Governor may, under the Pastoral Acts, issue a permit to any person desirous of searching for water. The permit is in force for one year and confers on the holder the exclusive right to search for water on the land specified therein, and a preferential right to a lease. The holder of a permit who has discovered a permanent supply of water equal to not less than 4,000 gallons per day suitable for great cattle may be granted a lease not exceeding 100 square miles at a similar rental to that paid by lessees who have discovered pastoral country (see preceding subsection (ix)). The conditions of stocking are modified, and for ten years the land is exempt from rating under the Wild Dogs Act. The discoverer of such water supply is also entitled to a reward of at least £200, provided the supply is not less than 3 miles from any existing well or bore.

(xi) *Irrigation Blocks.* Under the Irrigation Act, blocks of land are offered in irrigation areas on perpetual lease at rentals fixed by the Irrigation Commission. Provided that the block has not been cultivated, one-quarter only of the rent is payable for the first year, one-half for the second year, three-quarters for the third year, and thereafter the full amount annually. Not more than 50 acres of irrigable or reclaimed land may be held by one person. Residence for nine months in each year is necessary, and certain specified improvements must be effected.

(xii) *Town Allotments in Irrigation Areas.* Perpetual leases of town allotments in irrigation areas must be offered for sale by auction, and, if not so sold, may be sold by private contract at not less than the upset price. A lessee must within eighteen months effect improvements to the value of not less than ten times the annual rent, but not less than £150 if the allotment is used for residential purposes, or £200 if used otherwise. Annual licences may also be granted to occupy town allotments.

(xiii) *Forest Leases.* Leases of land comprised in any forest reserve under the Woods and Forests Act, for cultivation or grazing or both, may be offered for sale at public auction for any term not exceeding 42 years. With the approval of the Commissioner of Forest Lands such land may also be leased by the Land Board. With the exception of leases in certain scheduled forest reserves, a lessee may surrender his lease and be granted a perpetual lease or agreement to purchase in lieu thereof.

(xiv) *Areas Leased.* The following table gives the areas leased during each of the years 1917-18 to 1921-22 under the different forms of lease tenure :—

AREAS LEASED.—SOUTH AUSTRALIA, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
Perpetual leases—					
Homestead farms (repurchased)	.. ..	.. ..	.. ..	15	.. ..
Irrigation and reclaimed lands ..	287	864	617	804	911
Other Crown lands	27,763	76,684	205,730	147,361	159,007
Miscellaneous leases—					
Grazing	36,536	300	169,855	98,060	1,294
Grazing and cultivation	37,545	38,421	44,141	15,102	11,687
Agricultural College land .. ..	.. ..	914	.. ..	.. ..	.. ..
Forest .. ..	.. ..	.. ..	9,046	3,210	2,005
Pastoral leases	396,160	758,400	5,442,560	2,918,400	1,437,440
Total	498,291	875,583	5,871,949	3,182,952	1,612,344

The total areas held under lease are given in the table at the end of this chapter (see § 11, 5).

5. **Western Australia.**—(i) *Pastoral Leases.* Crown lands may be leased for pastoral purposes, the maximum areas of the blocks and the rentals varying according to the Division in which they are situated, but no person may acquire more than one million acres. Pastoral leases must be stocked within two years at the rate of ten head of sheep or two head of large stock for each 1,000 acres, within five years with double that quantity, and for the remainder of the term with three times that number. Pastoral leases may be leased for a term expiring on the 31st December, 1948, and the rentals are re-assessed at the end of fifteen years, but may not be increased by more than 50 per cent. Lessees must improve their land to the extent of £5 per 1,000 acres within five years, and to the extent of £10 per 1,000 acres within ten years.

(ii) *Special Leases.* The Governor may grant special leases of Crown lands, not exceeding 25 acres in area, for a term not exceeding 21 years, at a yearly rental of not less than £2. Such leases are granted for miscellaneous purposes, such as obtaining guano, sites for inns or factories, market gardens, and similar objects.

(iii) *Leases of Town and Suburban Lands.* In place of selling the freehold of town and suburban lands by auction, the purchaser may purchase in the same manner a 99 years' lease, and must pay annually 4 per cent. on the capital value in the case of town and suburban lots, and 3 per cent. in the case of suburban lots for cultivation, and a premium equal to the amount of his bid. Such lots may be converted into freehold at any time. The Governor may also lease any suburban or town lands on such terms as he thinks fit.

(iv) *Irrigation Leases.* Under the Rights in Water and Irrigation Act, any land may be acquired for or dedicated to the purpose of that Act, and the Minister may grant leases in perpetuity of any such land at an annual rent based on the unimproved capital value of the demised land (subject to re-appraisal at prescribed periods) and the value of the improvements thereon, subject to such conditions as are prescribed.

(v) *Forest Permits.* Under the Forests Act, the Conservator of Forests may issue permits to take and contract for the sale of forest produce on Crown lands, and such permits may confer on the holders the right (a) to occupy land as the site of a sawmill, as a timber depot, for growing fodder, or for any other approved purpose; or (b) to work a sawmill; or (c) to make roads or tramways; or (d) to graze and water cattle, on lands under his jurisdiction. The term of a permit must not exceed ten years, and such permits must be submitted to public auction or tender.

(vi) *Forest Leases.* The Conservator of Forests may grant forest leases of land within a State forest on such conditions as he may think fit, for periods not exceeding twenty years. Such leases may be for grazing, agriculture, or other purposes not opposed to the interests of forestry.

(vii) *Areas Leased.* The subjoined table gives the number of leases and the areas of land leased by the Lands Department during the years ending 30th June, 1918 to 1922 :—

LEASES.—WESTERN AUSTRALIA, 1918 TO 1922.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Number of leases issued ..	508	1,014	545	694	821

AREAS OF LEASES ISSUED.

	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral leases	20,287,672	39,016,706	18,961,478	20,303,900	28,259,124
Special leases	8,097	16,845	1,509	7,762	8,874
Leases in reserves	87,712	539,041	215,134	38,573	374,338
	20,383,481	39,572,592	19,178,121	20,350,235	28,642,336

The total areas leased are given in the table at the end of this chapter (see § 11, 6).

6. *Tasmania*.—(i) *Grazing Leases*. Leases of grazing lands are put up to auction, the upset price being fixed by the Commissioner, but at not less than an annual rent of five shillings per 100 acres. Lands not disposed of by auction may be gazetted and let by private contract.

(ii) *Leases of Land Covered with Button-grass, etc.* The Commissioner may lease to any person, for a period not exceeding 26 years, any Crown land covered with button-grass, river-grass or rushes, at a rental which must not be less than twenty-five shillings per 1,000 acres, provided that the lessee covenants to improve the area to the value of fifty shillings per 1,000 acres per annum.

(iii) *Leases of Mountainous Land*. Leases for a period not exceeding 21 years may be granted of land situated at an altitude of not less than 1,800 feet. The rent is not less than fifty shillings per 1,000 acres per annum, and the lessee must improve the land to the value of £5 per 1,000 acres annually.

(iv) *Miscellaneous Leases*. The Commissioner may lease for a period not exceeding fourteen years land for wharves, jetties, watercourses, manufactories, railways, tramways, etc. The lessee must carry out the conditions stated in the lease and pay the prescribed rent half-yearly.

(v) *Temporary Licences*. The Commissioner may grant to any person a temporary licence to hold, for not exceeding twelve months, any Crown lands for such purposes and on such terms and conditions as may be prescribed.

(vi) *Occupation Licences*. An occupation licence for a year expiring on the 31st December may be issued at a fee of five shillings to any person, such licence entitling him to occupy the surface of any Crown land within a mining area not exceeding one-quarter of an acre in extent.

(vii) *Pastoral Leases*. A holder of an occupation licence or any approved person may lease within a mining area by private contract a pastoral lease for a period not exceeding fourteen years, upon such terms and conditions as the Governor may see fit. No such lease may exceed 1,000 acres in area.

(viii) *Residence Licences*. A residence licence, for which a fee of ten shillings is charged, and which is in force until the 31st December, entitles the holder to occupy for residence an area not exceeding one-quarter of an acre in any town situated within a mining area which has been surveyed and gazetted as available therefor.

(ix) *Business Licences*. A business licence, costing twenty shillings for a year expiring on the 31st December, authorizes the holder to occupy for business purposes the surface of any Crown land within a mining area, not exceeding one-quarter of an acre in area.

(x) *Forest Leases, Licences and Permits*. Under the Forestry Act, the following leases, permits, and licences may be granted on lands contained in State forests and timber reserves:—(a) *Forest Permits*. A forest permit confers upon the holder, for not exceeding fifteen years, exclusive rights over the land therein defined for all purposes connected with the obtaining, conversion and removal of timber and forest produce. Such permit may be submitted to public auction or tender, and is subject to the payment of royalties on all produce taken, and to the prescribed conditions; (b) *Occupation Permits*. An occupation permit may be granted for a period not exceeding fifteen years for sawmill sites, timber depots, roads and tramways. A similar permit may also be issued entitling the holder to graze and water cattle; (c) *Forest Licences*. A forest licence authorizes the holder to take forest produce, subject to the payment of fees and royalties as prescribed. The term of such licence may not exceed three months; (d) *Forest Leases*. Land may be leased on such conditions as the Minister may think fit for not longer than fourteen years for grazing, agricultural, or other purposes. No compensation is payable for improvements, but the licensee may remove any buildings or fences, or dispose of them to an incoming tenant; (e) *Plantation Leases*. The Minister may grant, for not exceeding 60 years, leases for plantation purposes at such rent and upon such conditions as may be prescribed.

(xi) *Areas Leased.* The following table gives the areas leased during each year and the total areas leased at the end of each of the years 1917 to 1921 :—

AREAS LEASED.—TASMANIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
AREAS LEASED DURING YEAR.					
Pastoral leases	Acres. 74,340	Acres. 81,816	Acres. 149,246	Acres. 340,876	Acres. 197,597
TOTAL AREAS LEASED AT END OF YEAR.					
Ordinary leased land	1,193,169	1,201,169	1,341,000	1,540,000	1,608,000
Islands	197,406	197,918	151,000	107,000	108,000
Land leased for timber	155,889	183,804	218,784	230,524	236,847
Total	1,546,464	1,582,891	1,710,784	1,877,524	1,952,847

7. *Northern Territory.*—(i) *Pastoral Leases.* A pastoral lease may be granted for such term, not exceeding 42 years, as the Land Board determines. The rental for the first period is fixed by the Board, and is subject to re-appraisalment on such dates as are specified in the lease or as are prescribed. A holder of a pastoral lease under previous Ordinances may exchange his lease for one under the present (1923) Ordinance, in which case the rent varies according to the district in which the lease is situated from a minimum of two shillings per square mile to eight shillings per square mile. A lessee must within five years stock the land to the extent provided in the lease, and keep the land so stocked during the continuance of his lease.

(ii) *Agricultural Leases.* Agricultural lands are classified, and the maximum area which may be included in any one lease is as follows :—Division A, Cultivation Farms, Class 1, 1,280 acres, Class 2, 2,560 acres ; Division B, Mixed Farming and Grazing, Class 1, 12,800 acres, Class 2, 38,400 acres. Agricultural leases are granted in perpetuity, and the rent for the first period is fixed by the Land Board, and is re-appraised every 21 years. The lessee must—(a) in the case of lands for mixed farming and grazing, stock the land to the extent prescribed by the regulations and keep it so stocked ; (b) establish a home within two years and reside on the leased land for six months in each year in the case of land for cultivation, and for four months in each year in the case of land for mixed farming and grazing ; (c) cultivate the land to the extent notified by the Board ; and (d) fence the land as prescribed.

(iii) *Leases of Town Lands.* Leases of town lands are granted in perpetuity, the rental being fixed every fourteen years. Such leases must, in the first instance, be offered for sale by public auction, and if not so sold, may be allotted by the Board to any applicant, at the rental fixed by the Board. The lessee must erect, within such time as is notified, buildings to the value specified in the conditions of sale.

(iv) *Miscellaneous Leases.* The Land Board may grant a lease of any portion of Crown lands, or of any dedicated or reserved lands, for any other prescribed or approved purpose. Such leases are for a term not exceeding 21 years, and may be offered for sale by public auction, or granted to any applicant at an annual rental fixed by the Board.

(v) *Grazing Licences.* Licences may be granted to any person to graze stock on any particular Crown lands for such period, not exceeding one year, as is prescribed, and at the rent and on the conditions prescribed.

(vi) *Occupation Licences.* Licences may be granted for any period not exceeding five years, and on prescribed rentals and conditions, for the purpose of drying or curing fish, or for any manufacturing or industrial purpose, or for any prescribed purpose.

(vii) *Miscellaneous Licences.* The Board may grant licences for miscellaneous purposes for a period not exceeding twelve months on prescribed terms and conditions.

(viii) *Leases to Aborigines.* The Governor-General may grant to any aboriginal native, or to the descendant of any aboriginal native, a lease of Crown lands not exceeding 160 acres for any term of years upon such terms and conditions as he thinks fit.

(ix) *Areas held under Leases, Licences, and Permits.* The following table shows the total areas held under lease, licence, and permit at the end of the years 1917 to 1921 :—

NORTHERN TERRITORY.—AREAS HELD UNDER LEASES, LICENCES, OR PERMITS, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
Right of purchase leases ..	436	436	436	356	356
Pastoral leases and grazing licences	103,993,600	114,264,320	117,420,160	133,444,160	136,464,960
Other leases and licences ..	108,387	199,362	5,297,610	9,829,555	1,211,337
Total	104,102,423	114,464,118	122,718,206	143,274,071	137,676,653

On the 31st December, 1921, the areas held under leases and licences were :—Pastoral leases, 119,169,760 acres ; annual pastoral leases, 33,280 acres ; pastoral permits, 2,211,840 acres ; grazing licences, 15,150,080 acres ; miscellaneous leases (including water leases), 1,197,281 acres ; leases and permits not otherwise defined, 14,412 acres ; mining leases, 2,877 acres ; tin dredging leases, 329 acres ; mission station leases, 1,700 square miles. There were also 32,724 square miles under reserve for aboriginal natives of Australia, as well as 151,798 square miles mostly over pastoral holdings under licences to prospect for mineral oil and coal, and 143 square miles under licences to prospect for mica.

8. Federal Capital Territory.—(i) *General.* Under the Seat of Government (Administration) Act 1910, no Crown lands in the Territory may be sold or disposed of for any estate in freehold except in pursuance of some contract entered into before the commencement of that Act. Leases of land in the City Area are granted under the City Leases Ordinance 1921, and leases of other lands under the Leases Ordinance 1918–19.

(ii) *City Leases.* The Minister may grant leases in the City Area of any Crown land for business or residential purposes. Such leases may be issued for a period not exceeding 90 years at a rental equal to not less than 5 per cent. of the unimproved value of the land, which value is subject to re-appraisal at the expiration of twenty years, and thereafter every ten years. A suitable building must be commenced within one year and completed within two years, unless an extension of time, not exceeding two years, is allowed.

(iii) *Leases of other Lands.* Leases may be granted for grazing, fruitgrowing, horticultural, agricultural, residential, business, or other purposes for a period not exceeding 25 years, provided that a lease for any period exceeding five years must be approved by the Governor-General. The annual rental is 5 per cent. of the assessed value of the land, including improvements which are the property of the Crown, plus the amount of rates payable. No person may hold under lease land of a greater value than £6,000, exclusive of the value of buildings and fences thereon.

(iv) *Areas of Acquired, Leased, etc., Lands.* The following table shows the areas of lands acquired, alienated, in process of alienation, held under lease and unoccupied at the end of the year 1922 (exclusive of land at Jervis Bay) :—

TENURES OF LAND.—FEDERAL CAPITAL TERRITORY, 1922.

	Acres.
Area of acquired lands	206,056
Lands alienated	44,686
In process of alienation (conditional purchases and conditional leases)	73,345
Held under lease	123,800
Unoccupied lands (roads, reserves, etc.)	135,773
Total Area of Territory	583,660

§ 6. Closer Settlement.

1. *New South Wales.*—(i) *Acquisition of Land.* For the purposes of the Closer Settlement Act, the Governor may constitute three Closer Settlement Advisory Boards, but at present one such Board deals with closer settlement for the whole State. Where the Board reports that any land is suitable for closer settlement, the Governor may either (a) purchase it by agreement with the owner, or, failing such agreement, (b) where the value of the unimproved land exceeds £20,000, resume it compulsorily; but every such purchase or resumption must be approved by Parliament. Land within 15 miles of a railway, the construction of which is authorized, if the property of one owner, and exceeding £10,000 in value, may also be purchased or resumed.

(ii) *Sales by Auction.* Land acquired for closer settlement may be set apart as township allotments. Such allotments, which must not exceed half-an-acre in area, may be sold by auction, but no person may hold more than three such allotments, except by way of mortgage.

(iii) *After-auction Sales.* When any land has been offered for sale or lease by auction, and is not so sold or leased, any person may apply for the same at the upset price. A deposit of 25 per cent. of the upset price must be lodged with the application, and the balance paid according to the conditions notified in the Gazette. Such land may also be set apart for disposal under the Crown Lands Act.

(iv) *Closer Settlement Purchases.* Any male over 16 or female over 21 years of age, if not a holder, except under annual tenure, of land which, with the area sought, will substantially exceed a home-maintenance area, may apply for a closer settlement purchase. The purchase money is payable in 32 annual instalments at the rate of $6\frac{1}{2}$ per cent. of the capital value of the land including $5\frac{1}{2}$ per cent. interest on the unpaid balance of the purchase money. A deposit of $6\frac{1}{2}$ per cent. of the purchase money is required, except in the case of a discharged soldier or sailor. Residence for five years is obligatory, and permanent improvements to the extent of 10 per cent. of the value of the land must be effected within two years, and an additional 15 per cent. within five years.

(v) *Permissive Occupancies.* The Minister may grant permits to occupy any acquired land which remains undisposed of, upon such terms and conditions as he thinks fit.

(vi) *Closer Settlement Promotion.* Any three or more persons, or one or more discharged soldiers, each of whom is qualified to hold a closer settlement purchase, may negotiate with an owner of private lands to purchase a specified area on a freehold basis. If the Minister approves, the land is bought by the Crown and paid for in cash or debentures, but the freehold value including improvements must not exceed £3,000 for any one person, or in exceptional cases £3,500. If the land is suitable for grazing only, the value may be up to £4,000. If the land is purchased for cash, the applicant for a closer settlement purchase pays therefor at the ordinary rate, but if payment for the land is made in debentures, the deposit and annual instalments are $1\frac{1}{2}$ per cent. in advance of the rate of interest paid by the Crown, and the interest on the unpaid balance of the purchase money is $\frac{1}{2}$ per cent. in advance of the rate of interest paid by the Crown as aforesaid. Any one or more discharged soldiers or sailors may also enter into agreements to purchase on present title basis a conditional purchase, a conditional purchase lease, a conditional purchase and conditional lease, a homestead selection, a homestead farm, a settlement lease, a Crown lease, an improvement lease or scrub lease, not substantially of a greater area than is sufficient for the maintenance of a home. The vendor is paid by the Crown as heretofore, but the transfer is made direct to the purchaser.

(vii) *Areas Acquired and Disposed of.* Up to the 30th June, 1922, 1,681 estates had been opened for settlement under the Closer Settlement Acts.

The number of farms allotted under the Promotion Section of the Closer Settlement Act to date is 3,605, the area 1,686,994 acres, and the amount advanced £7,940,389.

The following statement gives particulars of the aggregate areas opened up to the 30th June in each year from 1918 to 1922 :—

CLOSER SETTLEMENT AREAS.—NEW SOUTH WALES, 1918 TO 1922.

Year ended 30th June—	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1918	759,526	91,996	851,522	2,947,221	170,259	3,117,480
1919	801,366	94,254	895,620	3,173,885	175,331	3,349,216
1920	1,011,223	94,254	1,105,477	4,295,223	175,331	4,470,554
1921	1,475,175	94,881	1,570,056	6,440,490	176,164	6,616,654
1922	1,961,682	94,881	2,056,563	8,389,178	176,164	8,565,342

The total area thus set apart has been divided into 4,137 farms, comprising 2,029,781 acres, the remaining area being reserved for recreation areas, roads, stock routes, schools, etc.

The following table gives particulars as to the disposal of the farms by closer settlement purchase for the years ended the 30th June, 1918 to 1922 :—

CLOSER SETTLEMENT ALLOTMENTS.—NEW SOUTH WALES, 1918 TO 1922.

Year ended 30th June—	Farms Allotted to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications. received.
	Number.	Area.	Value.		
	No.	Acres.	£	£	No.
1918	1,624	760,083	2,907,055	985,863	1,625
1919	1,736	786,942	3,105,214	1,139,176	1,740
1920	2,326	1,007,000	4,263,001	1,349,393	2,330
1921	3,317	1,520,350	6,527,801	1,670,995	3,325
1922	4,062	1,987,517	8,400,975	2,136,307	4,081

2. *Victoria.*—(i) *Acquisition of Land.* For the purposes of closer settlement, the Closer Settlement Board may either by agreement or compulsorily acquire blocks of private land, and may also ratify any agreement made between persons resident in Victoria and an owner of land for the purchase thereof, and dispose of such land under the Closer Settlement Act. The payment for the land is made in Victorian Government stock or debentures.

(ii) *Disposal of Land.* All land acquired under the Closer Settlement Act is disposed of as conditional purchase leases, which are of three kinds :—(a) Farm allotments, each of which must not exceed £2,500 in value ; (b) workmen's homes allotments, not exceeding £250 in value ; and (c) agricultural labourers' allotments, not exceeding £350 in value. Land for public purposes may be sold in fee-simple. Land in irrigation districts is also disposed of under the Closer Settlement Act by the State Rivers and Water Supply Commission.

(iii) *Sales of Land.* Land for public purposes may be sold in fee-simple, at a price fixed by the Board, but the area of each site must not exceed 1 acre for a church or public hall, 2 acres for a butter factory or creamery, 5 acres for a school, packing-shed, cool stores, fruit works, or cemetery, or 15 acres for a quarry or recreation reserve.

(iv) *Conditional Purchase Leases.* A conditional purchase lease is for such a term of years as may be agreed upon between the lessee and the Board, and provides for the

payment of the value of the land, with interest at not less than $4\frac{1}{2}$ per cent., in not more than 73 half-yearly instalments. The principal conditions under which a lease is held are as follows:—(a) Noxious animals and weeds must be destroyed within three years; (b) the land must be fenced in within one year; (c) personal residence during eight months of each year or residence by an approved deputy for the first five years is necessary; (d) improvements must be effected to the value of two instalments during the first year, to the value of 10 per cent. of the purchase money before the end of the third year, and to a further 10 per cent. before the end of the sixth year, or, if the residence condition is fulfilled by deputy, to the value of 10 per cent. of the purchase money during the first year, and to the value of 30 per cent. before the end of the sixth year; (e) on a workman's home allotment, a dwelling house of the value of at least £50 must be erected within one year and additional improvements to the value of £25 within two years; and (f) on an agricultural labourer's allotment, a dwelling house of the value of at least £30 must be erected within one year. After a period of twelve years, provided that all conditions are complied with and the full purchase-money is paid, a Crown grant may be issued.

(v) *Conditional Purchase Leases in Mountainous Areas.* In mountainous areas, the Minister may direct that no instalments of purchase-money and interest need be paid for a period not exceeding ten years, and the term of the lease is extended accordingly. Interest at the rate of 5 per cent. for the free period is added to the capital value. During each year of such period, the lessee must reduce at least one-tenth part of the allotment to a state of clear grass or cultivation.

(vi) *Areas acquired and made available for Closer Settlement.* The following statement shows the operations under the provisions of the Closer Settlement Acts up to the 30th June, 1918 to 1922:—

CLOSER SETTLEMENT.—VICTORIA, 1918 TO 1922.
(INCLUDING IRRIGATED AREAS.)

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.					Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments. (a)	Roads and Reserves.				
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.
1918	569,334	4,239,956	502,475	783	4,622	29,577	4,210	4,594	1,974,744	655,380	30,619
1919	570,617	4,252,543	501,537	785	4,586	30,244	5,037	4,476	2,300,705	729,493	28,689
1920	573,730	4,269,050	528,502	784	4,470	34,400	4,499	4,469	2,690,934	851,888	21,069
1921	575,900	4,298,765	524,369	784	4,446	41,830	4,471	4,490	3,183,045	992,920	10,979
1922	582,870	4,346,383	530,383	784	3,966	43,320	4,417	4,534	4,454,582	1,098,296	7,922

(a) Includes all land sold other than under Conditional Purchase Lease.

3. *Queensland.*—(i) *Acquisition of Land.* The Minister, with the approval of the Governor in Council, may acquire for the Crown, either by agreement or compulsorily, private land in any part of Queensland. The purchase-money may be paid either in cash, or, at the option of the Minister and with the consent of the owner of the land, wholly or in part by debentures. Not more than £500,000 may be expended in any one financial year in purchasing land. The land so acquired may be disposed of as perpetual leases only.

(ii) *Perpetual Lease Selections.* These leases are subject to the same conditions as similar leases under the Land Act. The capital value is fixed by the Governor in Council, but must not be less than the price actually paid for the land with 10 per cent. added thereto. The annual rent for the first fifteen years is determined by the Minister, but must not exceed the rate paid by the Crown as interest on the purchase-money for the particular estate of which the land forms part, and for each subsequent period of fifteen years by the Land Court at a sum equal to 5 per cent. of the unimproved capital value.

(iii) *Perpetual Town, Suburban, and Country Leases.* Perpetual leases of town, suburban, and country lands may be sold by auction, as is the case under the Land Act.

the conditions of tenure being the same, except that the rent for the first fifteen years is fixed at 5 per cent. of the upset price or price bid, whichever is the greater, and for further periods of fifteen years at 5 per cent. of the unimproved value of the land or of the amount bid at auction, whichever is the greater.

(iv) *Areas Acquired and Selected.* The total area acquired to the end of 1921 was 785,311 acres, costing £1,955,060, no fresh purchases having been made since 1916. The following table gives particulars of transactions under the Closer Settlement Act at the end of each of the years 1918 to 1922 :—

CLOSER SETTLEMENT.—QUEENSLAND, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Total area selected Acres	595,719	692,153	737,850	742,284	744,423
Number of selectors No.	2,220	2,351	2,370	2,393	2,932
Agricultural farms No.	2,338	2,310	2,143	2,121	2,112
Unconditional selections No.	252	252	256	257	256
Perpetual lease selections No.	73	236	489	535	556
Prickly pear selections No.	5	5	4	4	4
Perpetual lease prickly pear selections No.	1	1	2	2	4
Area sold by auction Acres	12,278	12,320	12,390	12,510	12,541

4. **South Australia.**—(i) *Acquisition of Land.* The Commissioner of Crown Lands may acquire land at a cost of not more than £600,000 in two financial years, either by agreement or compulsorily.

(ii) *Sales by Auction.* Town lands may be sold by auction for cash. Blocks which are unallotted after one year may also be sold by auction, 25 per cent. of the purchase money being paid in cash, and the balance in five yearly instalments with interest.

(iii) *Agreements to Purchase.* Land acquired for closer settlement is divided into blocks, but no block may exceed £4,000 in unimproved value unless suitable for pastoral purposes only, in which case the limit is £5,000. The land so divided is open to conditional purchase, the applicant agreeing (a) to reside thereon for nine months in each year; (b) to fence it in within five years; (c) to spend thereon in improvements during each of the first five years a sum equal to £3 for every £100 of the purchase-money; and (d) to pay for the block either (1) in 35 years, in half-yearly instalments, of which the first ten are to be equal and calculated at the fixed rate on the purchase price, and each of the subsequent sixty instalments at a rate sufficient to repay during the 35 years the price together with interest at a fixed rate on the balance thereof; or (2) if the Commissioner so directs, in 64 years in half-yearly instalments, of which the first sixteen are at the rate of £1 11s. 5d. for every £100 of the purchase-money and the remaining instalments calculated at a rate sufficient to repay the price together with interest on the unpaid balance.

(iv) *Miscellaneous Leases.* Any blocks remaining unallotted for one year may be let on miscellaneous lease at a rental and upon such terms as are determined by the Land Board.

(v) *Areas Acquired and Selected.* The following table shows the area of land acquired for the purposes of closer settlement, and the manner in which it has been dealt with at the end of the years 1918 to 1922 :—

CLOSER SETTLEMENT.—SOUTH AUSTRALIA, 1918 TO 1922.

Year ended 30th June—	Area of Lands Re-purchased.	Agreements with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Un-occupied (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1918 ..	743,191	497,032	703	1,531	54,826	144	124,728	64,227
1919 ..	748,689	508,720	609	1,477	54,116	144	133,460	50,163
1920 ..	761,285	515,805	556	1,476	53,648	144	153,522	36,134
1921 ..	783,863	519,474	496	1,412	46,475	144	167,211	48,651
1922 ..	783,863	513,118	492	1,327	45,932	144	176,441	46,409

The total area repurchased at 30th June, 1922, was 783,863 acres. Of this area 61,853 acres have been transferred to the Forestry and Repatriation Departments. The purchase money was £2,628,073. Of the total area, 739,568 acres had been allotted to 2,831 persons, the average area to each being 261 acres.

5. **Western Australia.**—(i) *Acquisition of Land.* Under the Agricultural Lands Purchase Act the Minister may purchase any land which an owner may offer to surrender at a price to be named in the offer, provided that such land is situated within 20 miles of an existing railway, or of one the construction of which is authorized by Parliament. The Minister may also improve any such acquired land prior to disposing of it, and the cost of such improvements must be added to the price at which it is sold to the selector.

(ii) *Disposal of Land.* Land acquired for closer settlement may be disposed of either as town and suburban areas, or under conditional purchase.

(iii) *Conditional Purchases.* Such land as is not reserved for roads, reserves, town and suburban areas, etc., is thrown open for selection under conditional purchase. The selling price is ascertained by adding to the price actually paid for the land 5 per cent. thereof and the cost of all improvements thereon, as well as the cost of subdivision and survey fee. Payment is to be made in half-yearly instalments extending over a period not exceeding 30 years. The maximum area which may be held by one person is 1,000 acres of cultivable land, or 2,500 acres of grazing land. In other respects the conditions are the same as those for ordinary conditional purchases.

(iv) *Town and Suburban Areas.* The Minister may dispose of town and suburban lands in the same manner as they may be disposed of under the Land Act.

(v) *Areas Acquired and Selected.* There has been no purchase of land for closer settlement purposes for several years, the total area acquired up to the 30th June, 1922, being 446,804 acres, costing £421,373. Of this area 15,825 acres have been set aside for roads, reserves, etc., leaving a balance of 430,979 acres available for selection. The following table gives particulars of operations under the Act for the years ending 30th June, 1918 to 1922 :—

CLOSER SETTLEMENT.—WESTERN AUSTRALIA, 1918 TO 1922.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Area selected during the year Acres	2,813	38,890	40,653	8,979	11,193
Total area occupied to date Acres	267,008	304,937	336,707	343,237	351,282
Balance available for selection Acres	163,971	126,042	94,272	87,742	79,697
Total Revenue .. £	319,759	343,767	363,814	382,202	400,563

6. **Tasmania.**—(i) *Acquisition of Land.* The Minister may either (a) purchase by agreement and acquire for the Crown private land ; or (b) compulsorily acquire and take for the Crown blocks of private land. Land may be acquired only when the unimproved value thereof exceeds £12,000. Land may also be acquired by agreement when three or more persons are desirous of obtaining private land belonging to the same owner. Payment may be made in cash, or in debentures or stock bearing interest at 4½ per cent., or partly in debentures or stock at the option of the owner and with the consent of the Minister. Not more than £100,000 may be raised annually for closer settlement purposes, and the total amount borrowed must not exceed £500,000. Land so acquired may be disposed of either by leases with right of purchase or by special sales.

(ii) *Leases with Right of Purchase.* Land acquired under the Closer Settlement Act is thrown open to be leased for a term of 99 years, with the condition that the lessee has the right to purchase the same after ten years, provided that he does not own land (exclusive of the lease) of a value exceeding £1,500 and has complied with all the following conditions :—(a) The land must be improved to the value of 2½ per cent. of the capital value in each of the first ten years ; (b) the lessee himself, or his wife, or child over eighteen years of age must reside on the lease within two years, for eight months in each of the

following eight years, and the lessee may not transfer, mortgage or sublet his lease without the approval of the Minister; and (c) prescribed conditions relating to mining and cultivation, the destruction of pests and noxious weeds, etc., must be complied with. Under ordinary circumstances no allotment may exceed £1,500 in value, exclusive of any buildings thereon, but the Minister may increase the value up to £4,000.

(iii) *Special Sales.* The Minister may sell land in fee-simple as sites for (a) churches or public halls, not exceeding 1 acre; or (b) dairy factories, fruit-preserving factories, mills, or creameries, not exceeding 5 acres. The price of such land must not be less than the cost thereof, and must be paid in cash. The Minister may also reserve an area up to 100 acres in extent for township purposes, and sell blocks thereof for cash or on credit under the same conditions as those contained in the Crown Lands Act. Land not suitable for disposal by way of lease may be sold in fee-simple either by auction or by private contract.

(iv) *Areas Acquired and Selected.* Up to the 30th June, 1922, 34 areas had been opened up for closer settlement. The total purchase money paid by the Government was £359,521, and the total area acquired amounted to 99,917 acres, including 11,477 acres of Crown land. Particulars for the years 1918 to 1922 are given in the following statement:—

CLOSER SETTLEMENT.—TASMANIA, 1918 TO 1922.

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
	No.	No.	Acres.	£	Acres.
1918 .. ..	..	8	2,366	205	..
1919 .. ..	..	..	..	..	..
1920	5	5	756	492	1,647
1921	6	6	11,113	786	11,113
1922 .. ..	..	..	..	..	3,618

7. *Summary.*—The following table gives particulars of operations under the Closer Settlement Acts at the 30th June, 1922:—

CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED AT 30th JUNE, 1922.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Area acquired .. acres	1,317,047	582,870	785,311	783,863	446,804	99,917	4,015,812
Purchasing price £	5,580,348	4,346,386	1,955,061	2,628,073	421,373	359,521	15,290,762
Farms, etc., { No.	3,006	4,534	2,932	2,831	748	300	14,351
allotted { acres	1,310,117	483,433	744,423	739,568	351,282	80,912	3,709,735

The next table shows the areas of private lands acquired at the end of each financial year from 1918 to 1922:—

CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED, 1918 TO 1922.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1918 ..	759,526	565,442	785,311	685,611	446,804	75,259 (a)	3,317,953
1919 ..	823,899	566,725	785,311	691,109	446,804	75,259 (a)	3,389,107
1920 ..	1,215,187	569,808	785,311	710,559	446,804	76,073 (a)	3,803,742
1921 ..	1,297,624	572,262	785,311	726,283	446,804	84,053 (a)	3,912,337
1922 ..	1,317,047	579,010	785,311	726,283	446,804	99,917 (b)	3,954,372

(a) Including 10,382 acres of Crown lands.

(b) Including 11,477 acres of Crown lands.

§ 7. Leases and Licences under Mining Acts.

1. **New South Wales.**—(i) *Holdings under Miners' Rights.* A holder of a miner's right, costing five shillings annually, is entitled to occupy Crown lands for the purpose of mining thereon. The size of a claim varies according to the nature of the mineral worked and the distance from existing workings. The principal condition of tenure is that work must be continuously carried on, unless exemption is granted. A holder of a miner's right may obtain an authority to enter and prospect on certain private lands. Water rights, machinery areas, and similar holdings may also be taken up under a miner's right.

(ii) *Gold-mining Leases.* A gold-mining lease is issued for a term not exceeding twenty years, with right of renewal for another twenty years. The maximum area granted is 25 acres, and the annual rent is two shillings per acre. A royalty of 1 per cent. of the value of all gold and minerals won must be paid to the State. Labour must be constantly employed—unless exemption is granted—at the rate of one man to every 5 acres during the first year of the lease, and thereafter one man to every 2 acres.

(iii) *Mineral Leases.* The maximum area which may be leased for mining for other than gold, coal, or oil is 80 acres. The rental and royalty are the same as for a gold-mining lease, but the labour conditions are one man to every 20 acres during the first year and one man to every 10 acres thereafter.

(iv) *Coal and Oil Mining Leases.* The term for a lease for coal or oil mining is twenty years, the maximum area 640 acres, the rental two shillings per acre, and the royalty sixpence per ton on all coal or shale won, and 1 per cent. of the value of all oil won. Two men must be employed to each area of 320 acres.

(v) *Business Licences.* A business licence, issued at an annual fee of one pound, entitles the holder to occupy for the purpose of carrying on business not more than one-quarter of an acre in a town or village, or 1 acre outside, on any gold or mineral field. No person may hold more than one area.

(vi) *Residence Areas.* A holder of a miner's right may occupy as a residence area not more than one-quarter of an acre in a town or village, or 2 acres outside, on any gold or mineral field. Improvements to the value of ten pounds must be effected thereon, and no person may hold more than one area.

(vii) *Areas Occupied under Mining Acts.* The following table gives particulars of operations for the years 1918 to 1922. Of the 3,187 acres leased for gold-mining, 473 acres were leased for dredging for gold.

AREAS TAKEN UP UNDER MINING ACTS.—NEW SOUTH WALES, 1918 TO 1922.

Purposes for which Issued or Occupied.	1918.	1919.	1920.	1921.	1922.
AREAS TAKEN UP DURING YEAR.					
	Acres.	Acres.	Acres.	Acres.	Acres.
Gold-mining	2,418	3,526	2,168	3,120	3,187
Mining for other minerals	9,676	12,877	22,535	21,759	11,358
Authorities to prospect	1,076	1,148	14,216	3,487	1,714
Other purposes	159	408	387	379	513
Total	13,329	17,959	39,306	28,745	16,772
TOTAL AREAS OCCUPIED AT END OF YEAR.					
Gold-mining	9,356	9,262	9,953	9,061	10,870
Mining for other minerals	209,577	214,301	229,509	248,568	263,227
Authorities to prospect	10	706	58	5,224	866
Other purposes	6,191	5,615	5,939	5,998	6,540
Total	225,134	229,884	245,459	268,851	281,503

2. *Victoria.*—(i) *Holdings under Miners' Rights.* Under a miner's right, costing two shillings and sixpence annually, a miner may take up a claim on Crown lands, the area of which varies according to the nature of the ground and the mineral worked, conditionally on such claim being worked continuously, unless exemption is granted. Under the same tenure water rights, machinery areas, etc., may be obtained.

(ii) *Gold-mining Leases.* A gold-mining lease is granted for a period not exceeding fifteen years, renewable for a further fifteen years, but no maximum area is prescribed. The rent is two shillings and sixpence per acre per annum, and the labour conditions are as specified in the lease; but, under certain circumstances, the expenditure of a specified amount of money may be substituted for the labour conditions.

(iii) *Mineral Leases.* A mineral lease is issued for the same period as a gold-mining lease, at a rental of not less than one shilling nor more than five pounds per acre per annum, as the Minister may determine, no royalty being charged. The area must not exceed 640 acres, and the Minister fixes the amount of labour to be employed, or, alternatively, the amount of money to be expended annually.

(iv) *Business Areas.* The holder of a business licence is entitled to occupy one-quarter of an acre of Crown lands in a city or town, or half-an-acre in a borough, or 1 acre outside, for the purpose of residence and carrying on his business. A business licence costs ten shillings a year in a city, town, or borough, or five shillings outside, together with 5 per cent. of the value of the land. A business area must be continuously occupied, unless exemption is obtained.

(v) *Residence Areas.* The holder of a miner's right may occupy a residence area of the same dimensions as a business area under the same conditions of occupation, but no further payment than the cost of the miner's right is required.

(vi) *Leases and Licences Issued.* During the year 1922, the number of leases, licences, etc., issued was 175, covering an area of 6,699 acres, the rent, fees, etc., for which amounted to £854. The following table gives particulars of operations for the years 1918 to 1922 :—

AREAS TAKEN UP UNDER MINING ACTS.—VICTORIA, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
	Acres.	Acres.	Acres.	Acres.	Acres.
Area taken up during year ..	5,563	7,032	7,032	10,696	6,699
Area occupied at end of year ..	76,799	69,165	48,561	52,892	49,178

3. *Queensland.*—(i) *Holdings under Miners' Rights.* The holder of a miner's right, costing five shillings a year, may take up a prospecting area or a claim, the areas of which vary according to the nature of the mineral sought for or worked, and the distance from existing workings. Such land must be worked continuously, unless exemption is granted. A holder of a miner's right is also entitled to cut races, reside on Crown land, cut timber thereon, etc.

(ii) *Licences to Search for Petroleum.* Any person may apply for a licence to search for petroleum. A prospecting area of 2,000 acres is allowed for a period of five years at a rental of one penny per acre per annum, and the holder of the licence must erect a boring plant and bore not less than 1,000 feet annually.

(iii) *Licences to Prospect for Coal or Mineral Oil.* Any person may apply for a licence for one year to prospect Crown land for coal or mineral oil. An area of 2,560 acres at a rental of one penny per acre is allowed. The licence may be renewed for one year.

(iv) *Gold-mining Leases.* The term of a gold-mining lease is 21 years, renewable for a further period of 21 years, and the maximum area is 50 acres, except in the case of a special lease, when 300 acres may be selected. The rent is one pound per acre per annum. One man must be kept constantly employed for every 4 acres, unless exemption is obtained.

(v) *Mineral Leases.* The term of a mineral lease is the same as that of a gold-mining lease, but the maximum area is 60 acres for petroleum, 320 acres for mineral oil, 640 acres for coal, and 160 acres for other minerals. The annual rent per acre is (a) one shilling for coal and mineral oil, (b) a peppercorn for petroleum, and (c) ten shillings for other minerals. The labour conditions are :—(a) For coal, one man for every 40 acres during the first two years, then one man for every 20 acres, or, alternatively, an expenditure during each half-year of £100 for every 40 and 20 acres respectively ; (b) for petroleum, one man for every 8 acres ; and (c) for other minerals, one man for every 10 acres. A royalty is payable of from fourpence to one shilling per ton on all coal raised, and of 12½ per cent. of the value of all petroleum won, there being no royalty on other minerals.

(vi) *Business Areas.* The holder of a business licence, the fee for which is two pounds a year, may occupy half an acre of land on a gold or mineral field for the purpose of carrying on a business, and must occupy the same continuously, but is entitled to obtain exemption from occupation after having expended the sum of ten pounds on improvements. No person may occupy more than one area with one licence.

(vii) *Residence Areas.* The holder of a miner's right may take up a residence area of one-quarter of an acre on a gold or mineral field, but may hold only one such area on the same field. Occupation is necessary in order to hold the ground, but exemption can be obtained under certain circumstances.

(viii) *Miners' Homestead Perpetual Leases.* A person, resident of a mining field, and otherwise qualified, also any corporate body carrying on business on the field, may take up a lease or leases not exceeding in area (a) 1 acre in a city, town, or township ; or (b) 20 acres within 1 mile of a city, town, or township ; or (c) from 80 to 640 acres outside such limits. The rent in the case of a lease sold at auction is 3 per cent. of the purchase price, and in other cases 1½ per cent. of the notified capital value of the land. The land is subject to re-appraisal every ten years. The title is a lease in perpetuity and the land must be occupied and improved.

(ix) *Areas held under Lease or Licence.* During the year 1921 the number of miners' rights issued was 4,653 and of business licences 21. In the following table are given particulars regarding the areas of land taken up under lease or licence, and the total areas occupied for the years 1918 to 1922, exclusive of those taken up or occupied under miners' rights, estimated at 5,000 acres. Included under the heading " Coal Prospecting Licences " in 1922 are 119,805 acres taken up for the purpose of prospecting for mineral oil.

AREAS TAKEN UP UNDER MINING ACTS.—QUEENSLAND, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
AREAS TAKEN UP DURING YEAR.					
Gold-mining	Acres. 254	Acres. 46	Acres. 246	Acres. 61	Acres. 354
Mining for other minerals ..	1,710	864	1,205	953	597
Coal prospecting licences ..	3,004	8,250	6,942	63,217	146,230
Miners' homestead leases ..	13,920	15,211	31,006	33,469	31,019
Total	18,888	24,371	39,399	97,700	178,200
TOTAL AREAS OCCUPIED AT END OF YEAR.					
Gold-mining	2,726	2,136	2,032	1,620	1,313
Mining for other minerals ..	42,193	32,860	31,908	33,370	30,954
Coal prospecting licences ..	3,004	8,249	6,942	63,217	} 468,870
Miners' homestead leases ..	211,472	270,588	286,998	314,161	
Total	259,395	313,833	327,880	412,368	501,137

4. **South Australia.**—(i) *Holdings under Miners' Rights.* A miner's right costs five shillings per annum, and entitles the holder to take up a prospecting claim, a mining claim, a machinery area, a water right, etc. He is also entitled to take up a lease for mining purposes for a term not exceeding 21 years. The area of an alluvial gold claim is 30 feet by 30 feet, of a reef gold claim, 100 feet by 600 feet, of a precious stones claim, 150 feet by 150 feet, and of a mineral claim 40 acres. A gold or precious stones claim must be constantly worked by one man, a mineral claim by two men, and a coal or oil claim by eight men.

(ii) *Search Licences.* A search licence may be issued to the holder of a miner's right entitling him to search on any specified mineral lands, not exceeding 5 square miles in area, for precious stones, mineral phosphates, oil, or rare minerals, which have hitherto not proved payable. The licence is in force for twelve months, and the fee is £1 for every square mile. One man at least must be employed for every 640 acres. A licensee has a preferential right to a mineral lease of 40 acres for rare metals, of 100 acres for mineral phosphates, and of 640 acres for oil, or to a precious stones claim of 150 feet by 150 feet.

(iii) *Gold Leases.* A gold lease must not exceed 20 acres in area. The rent is one shilling per acre per annum, and a royalty of sixpence in the pound of the net profits must be paid. The labour conditions are one man to every 5 acres. For gold dredging, the maximum area allowed is 200 acres.

(iv) *Mineral Leases.* The maximum areas which may be taken up as mineral leases are for (a) coal, oil, salt, and gypsum, 640 acres; (b) mineral phosphates, 100 acres; and (c) other minerals, 40 acres. The annual rent per acre is for (a) coal or oil sixpence, until a marketable quantity is produced, then one shilling; and for (b) other minerals, one shilling, except that a higher rent may be charged for salt or gypsum. A royalty of sixpence in the pound of the net profits is payable in the case of all minerals. The labour conditions vary according to the class of mineral won, being (a) for coal and oil, one man to every 40 acres; (b) for barytes, ochre, etc., one man for three months in each year; (c) for gypsum, two men for every 40 acres; (d) for salt, one man for every 40 acres from January to April; and (e) for other minerals, one man to every 10 acres.

(v) *Business Areas.* Any person may, on payment of one pound per annum, obtain a business licence entitling him to occupy a business claim of one-quarter acre in a township, or of 1 acre elsewhere, but no person may own or occupy more than one such claim, and business must be continuously carried on thereon.

(vi) *Residence Areas.* The owner of a claim, while actively engaged in prospecting or mining thereon, may occupy a residence site not exceeding one-quarter acre, but, in order to hold the same, must reside thereon.

(vii) *Occupation Licences.* Any person may be granted an occupation licence authorizing him to occupy for the purpose of residence and cultivation half an acre of Crown lands at a rental of two shillings per annum. Such licence is in force for fourteen years, and may be renewed from time to time until the land is required for public purposes.

(viii) *Areas Occupied under Mining Acts.* The following table gives particulars of the areas of Crown lands for which leases and licences were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and

licences from 1918 to 1922 inclusive. The particulars given include claims held under miners' rights :—

**AREAS TAKEN UP UNDER MINING ACTS.—SOUTH AUSTRALIA,
1918 TO 1922.**

Particulars.	1918.	1919.	1920.	1921.	1922.
AREAS TAKEN UP DURING YEAR.					
	Acres.	Acres.	Acres.	Acres.	Acres.
Gold-mining leases	54	180	37	130	127
Mineral and miscellaneous leases	6,604	6,156	19,855	5,617	5,120
Claims	15,878	12,778	176,758	52,164	34,827
Search licences	110,080	39,680	381,440	515,840	397,440
Occupation licences	7	2	4	5	5
Total	132,623	58,796	578,094	573,756	437,519

TOTAL AREAS OCCUPIED AT END OF YEAR.					
	Acres.	Acres.	Acres.	Acres.	Acres.
Gold-mining leases	1,240	957	748	765	827
Mineral and miscellaneous leases	34,379	36,680	52,877	55,882	58,682
Claims	20,888	24,688	168,131	69,982	55,791
Search licences	114,560	81,920	381,440	515,840	397,440
Occupation licences	103	101	101	101	101
Total	171,170	144,346	603,297	642,570	512,841

5. *Western Australia.*—(i) *Holdings under Miners' Rights.* A miner's right, costing five shillings a year, entitles the holder to take up a prospecting area or a claim and occupy Crown land for mining purposes or as an authorized holding. He may also construct water-races, dams, tramways, etc. Prospecting areas and claims are of various dimensions, and are held conditionally on being worked continuously.

(ii) *Gold Mining Leases.* A gold mining lease is granted for a period of 21 years, with the right of renewal for a further 21 years, and may contain an area of 24 acres. The rental is five shillings per acre for the first year, and one pound per acre for subsequent years. If the ground has been previously worked and abandoned, a lease may contain 48 acres, and the annual rent be not less than five shillings per acre nor more than one pound per acre. In the former case, not less than two men must be employed during the first twelve months, and then one man for every 6 acres, and in the latter case one man for every 12 acres.

(iii) *Mineral Leases.* The term of a mineral lease is 21 years, renewable for a similar period, and the maximum area allowed is (a) for coal, 320 acres, or for the holder of a prospecting area, 640 acres; (b) for oil, 48 acres for an ordinary lease, and 640 acres for a reward lease; (c) for precious stones, 24 acres; and (d) for other minerals, ordinary lease, 48 acres, and lease on abandoned ground, 96 acres. The annual rental per acre is for (a) sixpence; (b) ordinary lease, sixpence, reward lease, a peppercorn; and (c) and (d) ordinary lease, five shillings, and lease on abandoned ground not less than two shillings as the Governor may determine. A royalty of threepence per ton during the first ten years and of sixpence per ton for the balance of the lease is payable in the case of coal. In the case of oil, the royalty for the first five years is 5 per cent., and for the balance of the lease 10 per cent. of the output of the wells or bores on the demised area, or of the sales of the products, as may be determined by the Minister. The labour conditions are for coal and oil, during the first year, one man; during the second year, two men; and thereafter three men for every 60 acres; and for other minerals, two men for the first year, and then one man for every 6 acres of an ordinary lease, and for every 12 acres of an extended lease.

(iv) *Mineral Oil Licences.* A licence may be granted to prospect Crown lands for mineral oil for a period not exceeding ten years, provided that such right shall not extend to Crown lands below the surface of land alienated in fee-simple to a limited depth. The licence confers on the licensee the exclusive right to bore and search for mineral oil. The fee is five pounds per annum, payable in advance. The licensee must, within 30 days, or within such further time as the Minister in his discretion may allow, commence and thereafter continue to search for mineral oil upon the land held under his licence. On the discovery of mineral oil, the Governor may, by proclamation, reserve to the Crown and except from occupation for mining purposes all Crown lands within the boundaries of the oil basin as defined by the Government Geologist, and on the publication in the *Gazette* of such proclamation the existing licences to prospect for mineral oil shall cease and determine. In the event of mineral oil being discovered in payable quantities, and the discovery being duly reported, the licensee shall have the right within 30 days and such further time as may be allowed, to apply for and obtain a mineral oil reward lease of 640 acres and two ordinary mineral oil leases of 48 acres each.

(v) *Business Areas.* A holder of a miner's right may take up a business area not exceeding 1 acre in extent, and must occupy the same for carrying on business, but he may obtain exemption from occupation for six months, provided that he has effected improvements thereon to the value of fifty pounds.

(vi) *Residence Areas.* A residence area of one-quarter of an acre may be held by the holder of a miner's right, provided that he occupies the area. After expending ten pounds on improvements he may obtain exemption from residence for six months.

(vii) *Miners' Homestead Leases.* A miner, resident on a gold or mineral field, may be granted a miner's homestead lease not exceeding (a) 20 acres, if within 2 miles of the nearest boundary of any township or suburban area; or (b) 500 acres if beyond, at an annual rental, for the first twenty years, of (a) two shillings per acre, where the area does not exceed 20 acres; and (b) sixpence per acre where such area is exceeded, and thereafter one shilling, if demanded. Within three years the lessee must fence in the land, and within five years must improve it to the value of ten shillings per acre.

(viii) *Particulars of Areas Occupied.* The following table shows the areas for which leases and licences of Crown lands were issued during each year, and the total area occupied from 1918 to 1922 inclusive. These figures are exclusive of holdings under miners' rights. Of the areas shown as taken up in 1922, the area under lease was 5,150 acres for gold mining, 4,468 for mining for other minerals, 1,162 for miners' homesteads, and 3 for miscellaneous purposes, a total of 10,783 acres. The balance was taken up under licences.

AREAS TAKEN UP UNDER MINING ACTS.—WESTERN AUSTRALIA,
1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
AREAS TAKEN UP DURING YEAR.					
	Acres.	Acres.	Acres.	Acres.	Acres.
Gold-mining	12,362	16,790	36,067	17,291	17,836
Mining for other minerals	12,981	52,661	37,599	73,561	42,509
Other purposes	727	499	1,033	2,181	1,537
Total	26,070	69,950	74,699	93,033	61,882
TOTAL AREAS OCCUPIED AT END OF YEAR.					
Gold-mining	19,184	22,487	36,070	21,600	25,011
Mining for other minerals	49,952	84,381	96,036	101,322	78,073
Other purposes	45,241	38,439	38,485	38,397	37,896
Total	114,377	145,307	170,591	161,319	140,980

6. **Tasmania.**—(i) *Holdings under Miners' Rights.* A miner's right is issued to any person at a fee of five shillings for a year, expiring on the 31st December next after the date of issue, and entitles the holder to take possession of Crown land and to mine thereon, also to construct water-races, build a residence thereon, etc. An ordinary claim for a single holder contains half-an-acre.

(ii) *Prospectors' Licences.* A prospector's licence, issued at a fee of ten shillings for a year ending on the 31st December, empowers the licensee to take up a claim for the purpose of prospecting for gold or minerals. Such claim may be an ordinary claim with an area of up to 40 acres, or an extended claim up to 320 acres, and both must be worked continuously.

(iii) *Gold-mining Leases.* Any person may be granted a gold-mining lease of any Crown land for a period of 21 years, renewable for a further 21 years. Reward leases may be granted to discoverers of gold, and, under certain circumstances, special leases may be issued. The maximum area allowed is 40 acres, and the rent is ten shillings per acre per annum. At least ten pounds per acre must be expended annually in mining operations or in works connected therewith.

(iv) *Mineral Leases.* Mineral leases are also issued for a period of 21 years, renewable as in the case of gold-mining leases. The maximum area is—(a) for coal or oil, 640 acres; and (b) for other minerals, 80 acres. The annual rent per acre is—(a) for coal and oil, two shillings and sixpence; and (b) for other minerals, five shillings. At least two pounds per acre must be expended annually. No royalty is charged, except on oil, for which it is fixed at 5 per cent. of the gross value of all crude oil obtained after the first 50,000 gallons.

(v) *Leases and Licences Issued and Areas Occupied.* During the year 1922, the number of leases issued was 212, of which the more important were 52 for gold mining, covering 794 acres; 59 for tin, covering 326 acres; and 8 for coal, covering 1,359 acres. Twenty-seven licences to search for coal and oil were also granted. The following table gives particulars of the areas of Crown lands for which leases and licences (exclusive of holdings under prospectors' licences and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licences from 1918 to 1922 inclusive:—

AREAS TAKEN UP UNDER MINING ACTS.—TASMANIA, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
AREAS TAKEN UP DURING YEAR.					
Gold-mining	Acres. 294	Acres. 205	Acres. 1,195	Acres. 530	Acres. 794
Mining for other minerals ..	5,459	7,380	8,419	10,862	4,309
Licences to search for coal or oil ..	..	..	..	122,611	25,481
Other purposes	20	100	176	236	186
Total	5,773	7,685	9,790	134,239	30,770

TOTAL AREAS OCCUPIED AT END OF YEAR.

Gold-mining	657	537	1,403	1,894	2,424
Mining for other minerals ..	43,063	43,050	42,120	47,562	43,667
Licences to search for coal or oil ..	..	..	..	117,031	137,692
Other purposes	2,880	2,904	2,857	3,020	3,732
Total	46,600	46,491	46,380	169,507	187,515

7. **Northern Territory.**—(i) *General.* Mining generally is governed by the Northern Territory Mining Act passed by the South Australian Legislature in 1903, but special Ordinances have since been promulgated by the Commonwealth respecting tin dredging and mining for mineral oil and coal.

(ii) *Holdings under Miners' Rights.* The fee for a miner's right is five shillings for twelve months from the date of issue, and a holder thereof is entitled to occupy Crown lands for mining purposes, to construct races, to divert water, to reside on his holding, etc.

(iii) *Gold-mining Leases.* The area of a gold-mining lease must not exceed 40 acres, and the term is 42 years, renewable for a further 21 years. The rent must not be less than one shilling per acre per annum. A royalty of sixpence in the pound of the net profits must be paid, and one man must be kept constantly employed for every 10 acres, unless exemption is obtained.

(iv) *Mineral Leases.* Mineral leases may be granted in blocks not exceeding 80 acres each, but no person may hold more than 640 acres altogether nor more than 320 acres in contiguous blocks. A mineral lease is issued for a term not exceeding 99 years, and the rent and royalty are the same as in the case of a gold-mining lease. One man for every 20 acres must be constantly employed during nine months in each year.

(v) *Tin-dredging Leases.* These leases are issued for a term not exceeding 21 years at a rental of one shilling per acre per annum. The area must not exceed 1,000 acres, and the lessee must, after the first twelve months, keep continuously employed thereon either (a) not less than one man of European race or extraction for every 25 acres; or alternatively (b) fully-manned machinery of a value of not less than five hundred pounds for every 100 acres.

(vi) *Mineral Oil and Coal Licences.* A licence to search for mineral oil or coal, or for both, may be granted over an area not exceeding 1,000 square miles for a period of five years on payment of an annual fee of ten pounds. At least four white men must be employed for not less than six months in each year. A holder of a mineral oil licence who discovers oil on the land held under his licence has a preferential right to a mineral oil lease of 160 acres, together with a reward area of 640 acres thereon. A discoverer of coal in payable quantities has a preferential right to an area of 640 acres as a coal lease.

(vii) *Mineral Oil and Coal Leases.* Leases may be granted for a period of 21 years, renewable for a further 21 years, for mining for mineral oil or coal, the maximum areas being—(a) for mineral oil, 160 acres; and (b) for coal, 640 acres. In the case of mineral oil, the annual rent is one shilling per acre, and a royalty of 5 per cent. on the gross value of all crude oil obtained is payable; the lessee must also work the land to the satisfaction of the Minister. In the case of coal, the rent and conditions are fixed by regulation.

(viii) *Business Licences.* A business licence is issued at the prescribed fee and authorizes the holder to occupy on a gold-field, for the purpose of residence and carrying on his business, so much Crown land as is fixed by the Warden who issues the licence.

(ix) *Garden Licences.* The Warden may grant licences to occupy land upon any gold-field or mineral-field to any person for the purpose of growing fruit or other garden produce. The conditions as to rent, etc., are as prescribed, but the area must not exceed 20 acres.

(x) *Areas occupied.* The areas occupied under Mining Acts at the end of 1921 are given on page 180.

8. **Summary.**—The following tables show the total areas of Crown lands for which leases and licences for mining purposes were issued in each State during each year from

1918 to 1922 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period :—

CROWN LANDS, LEASES AND LICENCES FOR MINING PURPOSES, 1918 TO 1922.

Particulars.	N.S.W.	Victoria (a)	Q'land. (b)	S. Aust. (b)	W. Aust.(b)	Tas. (b)	Total.
AREAS FOR WHICH LEASES AND LICENCES ISSUED DURING YEAR.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1918 ..	13,329	5,563	18,888	132,623	26,070	5,773	202,246
1919 ..	17,959	7,032	24,371	58,796	69,950	7,685	185,793
1920 ..	39,306	7,032	39,399	578,094	74,699	9,790	748,320
1921 ..	28,745	10,696	97,700	573,756	93,033	134,239	938,169
1922 ..	16,772	6,699	178,200	437,519	61,882	30,770	731,842

TOTAL AREAS OCCUPIED AT END OF YEAR.

1918 ..	225,134	76,799	259,395	171,170	114,377	46,600	893,475
1919 ..	229,884	69,165	313,833	144,346	145,307	46,491	949,026
1920 ..	245,459	48,561	327,880	603,297	170,591	46,380	1,442,168
1921 ..	268,851	52,892	412,368	642,570	161,319	169,507	1,707,507
1922 ..	281,503	49,178	501,137	512,841	140,980	187,515	1,673,154

(a) Including private lands, leases, and water right licences only. (b) Exclusive of lands held under miners' rights only.

NOTE.—Up to the 31st December, 1921, an area of 97,245,000 acres was under mining leases and licences in the Northern Territory, of which 3,200 acres were under lease, and the balance under licence to prospect for oil, coal, and mica.

§ 8. Settlement of Returned Soldiers and Sailors.

1. New South Wales—(i) *General*. Special provision is made by the Returned Soldiers Settlements Act for the occupation of land by discharged soldiers and sailors. Crown land or acquired land may be set apart for discharged soldiers and sailors, and obtained by them under the legislation specified or under the Crown Lands or Closer Settlement Acts.

(ii) *Special Holdings*. The Minister may set apart any area of Crown land or land acquired under the Closer Settlement Act or Murrumbidgee Irrigation Act for sale or lease to discharged soldiers or sailors. In order to obtain a block of such land, the applicant must be certified as qualified by a classification committee. The prices, capital values, rents, charges for water (if supplied), and conditions are determined by the Minister, or by the Water Conservation and Irrigation Commission, as the case may be. The holder of a lease under this section, except in an irrigation area, may apply to purchase the same by fifteen annual instalments with $2\frac{1}{2}$ per cent. interest, but residence for five years on the land is obligatory.

(iii) *Soldiers Group Purchases*. Under the Returned Soldiers Settlement Act, land may be subdivided into home-maintenance areas and set apart as a group settlement for discharged soldiers as approved by the Minister. Upon being satisfied as to their fitness and suitability, the Minister may allot blocks on such settlement on prescribed conditions. Within twelve months from the date of allotment right of possession is established, the title commencing from the date of confirmation thereof. Five years' residence is necessary. Boundary fences must be completed within three years from the date of confirmation. The capital value as notified is repayable by annual instalments, usually of 6 per cent. thereof, including interest at 5 per cent. Under certain circumstances the Minister may postpone the payment of the first two annual instalments. The third instalment may

be similarly suspended provided that improvements of a value equal to the amount of the three instalments have been effected. On payment of all moneys due, and fulfilment of all conditions, a freehold title is given.

(iv) *Progress of Soldier Settlement.* Under the agreement with the Commonwealth Government, the New South Wales quota of returned soldiers to be settled on the land was fixed at 8,405, and of that number 6,807 had been settled up to the 30th June, 1922. The total area of acquired land at that date, including certain areas not then paid for, but on some of which soldiers had already been placed, was 1,907,943 acres, and the cost thereof £7,914,446, the area of land acquired in the Murrumbidgee Irrigation Area being excluded, but not the cost thereof. The total commitments to the 30th June, 1922, amounted to £15,605,114, comprising £7,940,476 incurred in the acquisition of land, £4,691,108 expended in advances, and £2,973,530 on public works, the actual expenditure for the year being £3,887,957. Of the total amount £10,015,885 is payable by the Commonwealth Government, and the balance by the Government of New South Wales. Altogether, 4,599,471 acres have been made available exclusively for returned soldiers, and, in addition to the 6,807 soldiers already in actual occupation, 224 applications have been approved, but not finalized.

2. *Victoria.*—(i) *General.* Returned soldiers may take up land under the conditions contained in the Land Act and Closer Settlement Act. The Governor may also set apart any area of Crown land for disposal under those Acts to discharged soldiers only, or subdivide the same into blocks, which may be granted to them on special terms. The Closer Settlement Board is empowered to improve land (a) prior to its disposal in allotments; or (b) at any time within the first three years after it has been disposed of under conditional purchase lease; or (c) at any time prior to its being resold after forfeiture to the Crown. The cost of the improvements is, in the case of (b) to be repaid in 40 half-yearly instalments, and in the cases of (a) and (c) it may be added to the value of the allotments, or treated as an advance.

(ii) *Progress of Soldier Settlement.* The total area of land recommended for purchase and acquired under the Discharged Soldiers Settlement Act up to the 30th June, 1922, was 1,721,758 acres, including 45,112 acres sundry purchases from Closer Settlement estates, the total cost thereof being £13,052,661. The number of allotments disposed of was 7,366, comprising 1,607,587 acres. In addition, 35,090 acres were sold by auction. The number of soldier settlement lessees at the 30th June, 1922, was 8,161.

3. *Queensland.*—(i) *Acquisition of Land.* The Minister may, with the approval of the Governor in Council, acquire for the Crown, either by agreement or compulsorily, country, town or suburban land in Queensland, whether alienated in fee-simple or held from the Crown under any tenancy or tenure. The purchase-money may be paid, at the option of the Minister, in cash or in debentures, bearing interest at $4\frac{1}{2}$ per cent. per annum, which are not negotiable for five years. Crown land may also be set apart as open for selection as perpetual lease selections by discharged soldiers only.

(ii) *Perpetual Lease Selections.* (a) Where the land is unoccupied Crown land or has been acquired under the Discharged Soldiers Settlement Act as the whole or part of a holding held under pastoral lease or grazing selection tenure or scrub selection or not acquired under the Closer Settlement Act, the following provisions apply:—1. No deposit of rent or survey fee is necessary. 2. During the first three years, the rent is a peppercorn, if demanded. 3. After the first three years, the survey fee must be paid in ten annual instalments. 4. From the fourth to the fifteenth year, the annual rent is $1\frac{1}{2}$ per cent. of the notified capital value, and thereafter $1\frac{1}{2}$ per cent. of the unimproved capital value, as determined by the Land Court every fifteen years. 5. The lease is subject to the condition of personal residence during the whole term.

(b) Where the land has been acquired under the Closer Settlement Act or under the Discharged Soldiers Settlement Act, not being the whole or part of a holding held under pastoral lease or grazing selection tenure or scrub selection, the terms are the same, except:—1. The survey fee is payable in instalments after five years. 2. The annual rent during the first fifteen years is 3 per cent. of the notified capital value, together with the

rate per cent. of the sum, if any, paid by the Crown for clearing, and for every term of fifteen years thereafter, 3 per cent. of the unimproved capital value, as determined by the Land Court, together with 3 per cent. of the sum, if any, paid by the Crown for clearing.

(iii) *Perpetual Town and Suburban Leases.* These leases are not offered at auction, but are open to applicants in the same manner as perpetual lease selections. The conditions of tenure and rental are the same as those for perpetual lease selections by discharged soldiers.

(iv) *Progress of Soldier Settlement.* The total number of returned soldiers provided with selections at the 30th June, 1922, was 2,520, of whom 2,243 held perpetual lease selections of a total area of 620,824 acres under the Discharged Soldiers Settlement Act, and 277 held under the same tenure 151,706 acres under the Lands Act. There were also 21 perpetual town leases, and nineteen perpetual suburban leases, containing 11 and 105 acres respectively. The aggregate area of land set apart under the Discharged Soldiers Settlement Act was 738,306 acres for perpetual lease selection, 11 acres for perpetual town lease, and 105 acres for perpetual suburban lease. In addition, suitable lands in different localities, comprising a total area of 27,586 acres, are reserved for discharged soldiers. The area of private land acquired was 40,141 acres, and altogether 2,283 farms had been allotted, containing an area of 620,940 acres.

4. *South Australia.*—(i) *Acquisition of Land.* The Minister for Repatriation may acquire by purchase, either by agreement or compulsorily, land which is held in fee-simple or under Crown lease, for the purpose of the settlement of discharged soldiers thereon. He may also purchase land of any tenure with the view to the settlement thereon of any particular discharged soldier. The Governor may also set apart any area of Crown lands for allotment to discharged soldiers only.

(ii) *Disposal of Land.* Any land set apart or purchased for discharged soldiers may be subdivided into suitable blocks, and offered to them on perpetual lease or on leases for such terms of years as the Minister thinks convenient. The Minister may remit, wholly or in part, any rent or purchase money payable by a discharged soldier upon any lease granted or agreement entered into.

(iii) *Progress of Soldier Settlement.* During the financial year 1921–22, 280,182 acres were purchased at a cost of £608,071, making the total amount purchased 1,298,395 acres, costing £3,847,742. The number of soldiers settled at the 30th June, 1922, was 2,868.

5. *Western Australia.*—(i) *Acquisition of Land.* Under the Agricultural Lands Purchase Act the Governor may compulsorily acquire land held in fee-simple, provided that the value thereof exceeds £5,000, exclusive of improvements, for the purpose of settling discharged soldiers thereon. The Minister may also purchase any alienated land, including land held under pastoral lease or conditional purchase, which a discharged soldier may desire to acquire.

(ii) *Disposal of Land.* The Governor may set apart any areas of land for the purpose of being disposed of to discharged soldiers exclusively, under the Land Act or under a special form of tenure.

(iii) *Ordinary Tenure.* When land has been taken up under the Agricultural Lands Purchase Act, the payment of instalments may be spread over 40 years, and the rate of interest may be reduced during the first five years, while payments may also be deferred for the same period. The payment of rent on a pastoral lease granted to or acquired by a discharged soldier may be remitted for the first five years, provided that the area thereof does not exceed 100,000 acres.

(iv) *Special Tenure.* A discharged soldier, who has obtained a qualification certificate, may apply for a block of land in an area set apart for the purpose of discharged soldiers, on the terms either of the Land Act or of the Agricultural Lands Purchase Act, but with the following modifications :—The Minister may allow payment of the instalments

of the price of the land, including the value of improvements, to commence not later than five years from the commencement of the conditional purchase ; and the price, as fixed by the Land Act (exclusive of the value of the improvements, if any, and survey fee), of Crown lands acquired by a discharged soldier is reduced by one half, and any soldier who, prior to enlisting, was a holder of a conditional purchase under the Land Act, is not required to pay more than half the purchase money. This latter provision does not apply to land acquired by the Crown under the Agricultural Lands Purchase Act.

(v) *Areas Acquired and Allotted.* At the 30th June, 1922, the area of land which had been acquired or set apart for soldier settlement was 253,647 acres, the purchase price of which was £517,698. The number of farms allotted was 539, the total area of which was 223,012 acres.

6. *Tasmania.*—(i) *Acquisition of Land.* The Minister may purchase by agreement and acquire or compulsorily acquire and take for the Crown private land for the purpose of settling returned soldiers thereon, in the same manner as under the Closer Settlement Act, with the exception that the minimum value of land which may be compulsorily acquired is reduced to £6,000. Up to £2,850,000 may be borrowed for the purposes of soldier settlement.

(ii) *Free Grants to Returned Soldiers.* Any discharged soldier, to whom a qualification certificate has been issued, may select under the Crown Lands Act one lot of first-class land (maximum value £1 per acre), not exceeding 100 acres in area, or its equivalent in value of second or third class land. The land is free, but the conditions as to occupation and improvements in the Crown Lands Act must be complied with, and the occupation must be effected by the returned soldier or by a member of his family.

(iii) *Ordinary Tenure by Returned Soldiers.* The Governor may set apart areas of Crown lands or closer settlement land to be disposed of under the Crown Lands Act or the Closer Settlement Act to discharged soldiers exclusively, and may modify the provisions of those Acts under which the land is taken up.

(iv) *Special Tenure for Returned Soldiers.* Land acquired under the Returned Soldiers Settlement Act may be disposed of by way of sale or lease to discharged soldiers, as well as any land which the Governor may have set apart for the same purpose. This land is subdivided into such allotments and disposed of at such prices, capital values or rents, and subject to such conditions as the President of the Closer Settlement Board determines. No deposit is required from an applicant, and where the land is disposed of by way of lease or sale no rates or taxes need be paid for the first four years.

(v) *Areas Acquired and Allotted.* At the 30th June, 1922, the area acquired or set apart for soldier settlement was 270,101 acres, of which 269,515 acres comprised private land purchased at a cost of £2,004,983. The number of farms allotted was 1,709, containing 270,101 acres.

7. *Summary.*—The following table gives a summary of the area acquired, the purchase price thereof, and the number and area of farms allotted in all the States for the year 1922 :—

SOLDIER SETTLEMENT.—AREAS ACQUIRED AND ALLOTTED AT
30th JUNE, 1922.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Area acquired or set apart acres	1,446,024	2,364,206	766,008	2,101,022	253,647	270,101	7,201,008
Purchase price £	6,670,807	13,462,979	270,488(a)	3,759,892	517,698	2,004,983	26,686,847(c)
Farms, etc., allotted f No.	2,991	8,161	2,283	2,695	539	1,709	18,378
\ acres	1,446,024	2,182,432	620,940	1,926,036	223,012	270,101	6,668,545
Area of private land acquired to date acres	1,446,024	1,676,646	40,141	1,298,395	(b)	269,515	4,730,721(c)

(a) The price of a considerable area resumed has not yet been determined. (b) Not available.
(c) Incomplete.

§ 9. Tenure of Land by Aliens.

1. **New South Wales.**—(i) *General.* In the Crown Lands and Closer Settlement Acts restrictions are placed on the acquisition of Crown lands by aliens, but in the Mining Act there is no mention of any such restriction.

(ii) *Crown Lands Act.* An alien is not qualified to apply for an original homestead selection, an original purchase lease, a settlement lease, or an original conditional purchase, unless he has resided in New South Wales for one year and at the time of making application lodges a declaration of his intention to become naturalized within five years. If he fails to become naturalized, the land is forfeited. The residential limit of twelve months does not, however, apply to applicants for homestead farms, Crown leases, suburban holdings, or leases within irrigation areas; but any alien, who becomes the holder of any of these tenures, must become naturalized within three years. Failure to comply with this regulation involves forfeiture of the holding, together with all improvements thereon.

(iii) *Closer Settlement Act.* No person, other than a natural-born subject or a naturalized subject of His Majesty who was previously the subject of an allied or neutral power, or, if the subject of a neutral power, has served with the military or naval forces of His Majesty in the war of 1914–1919, is qualified to apply for a settlement purchase, but an unnaturalized subject of such allied power is qualified if he has resided in New South Wales for one year and lodges a declaration of his intention to become naturalized within two years. If such person fails to become naturalized the land is forfeited.

2. **Victoria.**—(i) *General.* No restrictions are placed on the holding of land by aliens in either the Land Act or in the Closer Settlement Act. Under the Supreme Court Act (Section 58) every alien friend resident in Victoria may acquire and hold real and personal property in the same manner as if he were a natural-born subject of His Majesty.

3. **Queensland.**—(i) *Land Act.* No alien, who has not first obtained a certificate that he is able to read and write from dictation words in such language as the Minister may direct, is competent to apply for or hold any selection. If an alien acquires a selection or any interest therein, and does not within five years become naturalized, all his interest in such selection is forfeited. If, however, an alien has made application to become a naturalized subject before the expiration of five years, and his application has, under any law, not been dealt with, such period shall be extended by a further five years.

(ii) *Mining Act.* No Asiatic, African, or Polynesian alien may exercise any privilege under a miner's right, except that of alluvial gold mining, nor may he hold any lease or business licence.

(iii) *Leases to Aliens Restriction Act.* Under the Leases to Aliens Restriction Act of 1912, no lease may be granted of any parcel of land exceeding 5 acres in extent to any alien who has not first obtained a certificate that he is able to read and write from dictation in such language as the Secretary for Public Lands may direct.

4. **South Australia.**—(i) *General.* The only reference to the tenure of lands by aliens is in the Irrigation Act, which prescribes that persons of any Asiatic race, who are not subjects of His Majesty, are disqualified from being lessees.

5. **Western Australia.**—(i) *General.* Asiatic and African aliens are not allowed to hold Crown lands, except town or suburban lands situate northward of latitude 25 degrees south. Rural Crown lands cannot be selected or held by unnaturalized persons from other countries.

(ii) *Mining Act*. Under the Mining Act a miner's right may not be issued to any Asiatic or African alien, nor to any person of Asiatic or African race claiming to be a British subject, without the authority of the Minister. An Asiatic or African alien cannot hold a mining lease.

6. *Tasmania*.—(i) *Aliens Act*. Under the Aliens Act of 1913, real and personal property of every description may be taken, acquired, held, and disposed of by an alien in the same manner in all respects as by a natural-born British subject.

7. *Northern Territory*.—(i) *Crown Lands Ordinance*. A lease may be granted to any person over eighteen years of age.

(ii) *Northern Territory Mining Act*. A miner's right held by an Asiatic alien entitles him to mine only for gold or tin on alluvial ground, while under the Northern Territory Mining Act, and the Tin Dredging Ordinance, no mining lease may be granted to an Asiatic alien, and no such alien is entitled to acquire or hold any lease or any interest therein.

(iii) *Mineral Oil and Coal Ordinance*. No licence or lease shall be granted to (a) any company other than a British Company registered under the provisions of the law relating to companies in force in the Northern Territory; (b) any company, unless two-thirds at least of its shares are held by natural-born or naturalized British subjects; or (c) to any person who is not a British subject.

§ 10. Advances to Settlers.

1. *New South Wales*.—(i) *General*. Advances to ordinary settlers are effected through the Rural Bank Department of the Government Savings Bank, and may consist of either (a) overdrafts on current accounts; (b) fixed or amortization loans upon mortgage of an estate in fee-simple or upon any tenure or holding under the Crown Lands Act; or (c) advances on purchase of farms. Advances to soldier settlers are made under the Returned Soldiers Settlement Act.

(ii) *Government Savings Bank Act*. (a) *Loans to Settlers*. The following provisions apply to fixed or amortization loans:—(1) no loan may be for a less amount than £50, nor for more than £2,000 to any person; (2) no loan may be made in respect to encumbered land, unless it is used to pay off such encumbrance; (3) the amount of any loan must not exceed two-thirds of the sale value of the security; (4) in the case of holdings under the Crown Lands Act (other than Western Lands leases and homestead leases) in respect of which a certificate of fulfilment of conditions has not issued, or which have not a currency of five years, a loan not exceeding £500 and not exceeding the value of the improvements may be made with the guarantee of the Minister for Lands, and (5) in the case of Western Lands leases and homestead leases the loan must not exceed 50 per cent. of the sale value of the security. The interest is fixed by the Commissioners of the Savings Bank, and loans are repayable either (i) in half-yearly instalments of interest and principal extending over 31 years, or (ii) at fixed dates.

(b) *Advances on Purchase of Farms*. The Commissioners may make advances to assist persons in purchasing lands, provided that the title is either certificated conditional purchase or freehold. The amount of the advance must not exceed 80 per cent. of the Commissioners' valuation of the security, and in other respects these advances are subject to the same provisions as other loans from the Rural Bank Department, but are limited to a maximum of £1,250 in each case.

(iii) *Returned Soldiers Settlement Act*. Advances may be made up to £625 to returned soldiers for the following purposes:—(a) clearing, fencing, draining, water supply, and general improvement of the land; (b) purchases of implements, stock, and other necessary commodities; and (c) the erection of buildings. The terms of repayment are usually (a) house, water supply, fencing, and other permanent improvements, by repayments extended over 25 years (the first five years' interest only to be paid); and (b) tools, stock, and implements, by payments extended over six years (interest only to be paid at the

end of the first year). Interest is fixed at not exceeding $3\frac{1}{2}$ per cent. for the first year, 4 per cent. for the second year, and so on, the rate increasing by not more than one-half per cent. for each subsequent year, until the maximum rate of $6\frac{1}{2}$ per cent. has been reached.

(iv) *Amount of Advances.* Up to the 30th June, 1922, the total amount advanced by the Government Savings Bank was £8,550,973, the amount advanced during the year ending 30th June, 1922, being £2,320,865. Repayments to the amount of £3,297,015 have been made, leaving a balance due of £5,253,958.

2. **Victoria.**—(i) *General.* The principal institution which advances money to settlers is the State Savings Bank. The Closer Settlement Board is also authorized to make such advances, and the Government may lend money to Cool Stores Trusts, and, under special drought circumstances, for the purchase of seed, cattle, etc., for which purpose separate Acts have been and are passed from time to time as required.

(ii) *State Savings Bank Act.* The Crédit Foncier Department of the State Savings Bank was created for the purpose of making advances to settlers and others, and is authorized to borrow up to £10,000,000 for that object. The Commissioners may lend money to farmers, etc., on the security of any agricultural, horticultural, viticultural, or pastoral land held in fee-simple or on conditional purchase. Such loans are secured by a first mortgage on the property, and are payable either in cash or by debentures or mortgage bonds, at the option of the Commissioners. No advance may be less than £50, or more than £2,000, and each advance is limited to two-thirds, or, in the case of returned soldiers, to three-quarters, of the value of the land, and, in the case of a conditional purchase, this amount is reduced by the amount of rent outstanding. Where improvements are effected on a conditional purchase lease to the amount of one pound per acre at least, and the value of the land and improvements exceeds two pounds per acre, an additional advance, not exceeding fifteen shillings per acre, may be made. In the case of land which has acquired a special increase of value by reason of being cultivated as vineyards, hop-grounds, orchards, etc., advances may be made on the following terms:—(a) the total amount which may at any time be advanced must not exceed £100,000; (b) the amount of allowable advance may be increased by one-fourth, but not to a greater amount than £30 per acre; and (c) no advance may be made for a longer period than fifteen years. Repayment of advances must be made in 63 half-yearly instalments of principal and interest, a slight reduction in the amount being made in the case of returned soldiers. The Commissioners may also advance money to companies in country districts for the erection of works for freezing, packing, or storing any commodities which are included in the Primary Products Act or in the Fruit Act, provided that shares equal in value to not less than two-thirds of the amount proposed to be expended have been taken up, and one-third thereof paid for in cash. The loan is granted upon such terms and conditions as the Commissioners may think fit.

(iii) *Closer Settlement Act.* The Closer Settlement Board may advance money to (a) lessees of workmen's homes and agricultural labourers' allotments in aid of the cost of fencing and erecting dwelling-houses; (b) lessees of Crown land for carrying on farming or grazing pursuits, or for adding to improvements; (c) municipalities, for making roads to any land acquired by the Board; and (d) owners of land for the purchase of wire netting. An advance may not exceed £625, or, in the case of land which is suitable mainly for grazing, £1,000, and is repayable in 40 half-yearly instalments, with 5 per cent. interest. Where a lessee has, after not less than six years, obtained his compliance certificate or Crown grant, the amount of loan may be increased to £1,000, but must not exceed 60 per cent. of the value of the improvements and amount of purchase-money paid.

(iv) *Discharged Soldiers' Settlement Act.* The Closer Settlement Board may advance to a discharged soldier up to £625, or, if he is the owner or lessee of land in the Mallee country or of grazing land only, up to £1,000. The rate of interest is fixed by the Minister, and is $3\frac{1}{2}$ per cent. for the first year, increasing by $\frac{1}{2}$ per cent. annually until the rate determined is reached. Repayment is as prescribed.

(v) *Primary Products Advances Act.* A company registered under the Companies Act, or a society registered under the Provident Societies Act, which is carrying on the

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undertaking of abattoirs and freezing works, or cool storage for fish, or dried or canned fruit, or jam factories, tobacco-curing, or fruit-works, may be granted by the State Savings Bank a loan for the purpose of constructing such works. No loan may be granted unless at least one-third in number and value of the shareholders are persons engaged in the production of the primary products supplied to the company and full particulars of the proposed undertaking are furnished. The loan is repayable at such times and with such interest as the Commissioners may determine, the property must be mortgaged to the Bank, and a sum, not exceeding 5 per cent. of the value of the buildings, etc., paid annually into a depreciation fund.

(vi) *Fruit Act.* A Cool Stores Trust may be granted a loan by the Treasurer for the purchase of land and for the erection of a cool store thereon. Such loan must be a first charge on the property and revenue of the Trust, be for an agreed term of years, and provide for repayment with interest at $4\frac{1}{2}$ per cent. in 40 half-yearly instalments. The State Savings Bank Commissioners may also advance money to a company for the purpose of constructing fruit-works, provided that at least one-third in number and value of the shares are held *bona fide* by shareholders being owners or occupiers of orchards within the locality. The terms of the loan are the same as those under the Primary Products Advances Act.

(vii) *Amount of Advances.* The following table gives particulars respecting advances, etc., made during and up to the end of the year ended 30th June, 1922 :—

ADVANCES TO SETTLERS.—VICTORIA, 1921–22.

Authority Making Advances.	Advances made to —	Advances made during Year.	Total Advances at 30th June, 1922.	Amount Outstanding at 30th June, 1922.
		£	£	£
State Savings Bank	Civilians	341,469	5,193,646	2,215,587
	Discharged soldiers ..	74,130	167,290	166,415
Closer Settlement Board	Closer Settlement settlers ..	103,807	5,167,194	3,390,146
	Soldier settlers ..	3,771,566	18,023,371	16,987,793
Treasurer	Cool stores, canneries, etc.	1,743,863	6,325,539	4,995,731
Total .. ..	.. ..	6,034,835	34,877,040	27,755,672

3. *Queensland.*—(i) *General.* Advances to settlers are made under the State Advances Act (formerly the Government Savings Bank Act), the Discharged Soldiers' Settlement Act, and the Co-operative Agricultural Production Act. Under the last-named Act, advances may also be made to co-operative companies for the erection of works for the manufacture or cool storage of primary products.

(ii) *State Advances Act.* The State Advances Corporation, which took the place of the Government Savings Bank, may make advances to any owner or occupier of property which is used for agricultural, dairying, grazing, horticultural or viticultural purposes, on the security of a first mortgage. The limit of advance to one person is £1,200, and, subject to the succeeding paragraphs, no advance may exceed fifteen shillings in the pound of the fair estimated value of the holding and existing or proposed improvements. The purposes for which loans are granted are :—(a) to pay the purchase-money of the holding ; (b) to release a mortgage or other liability on the holding ; (c) to purchase stock, machinery, and implements ; (d) to effect suitable improvements ; and (e) for general purposes (including a maximum amount of £400 for unspecified purposes to *bona fide* resident settlers). Advances may also be made, not exceeding in the aggregate £300, to the full value of the following improvements :—(a) buildings ; (b) ringbarking, clearing, fencing, draining, and water conservation ; and (c) wells or bores (inclusive of lifting power). Where a holder of agricultural land has an area of 35 or more acres cleared, fenced, and sown with approved grass, an amount up to £100 may be advanced for the purchase of dairy stock to the full value of such improvements. Further security may

be required by way of stock-mortgage, bill of sale, lien on crops, etc. During the first five years following the date of the loan interest is payable at the rate of 5 per cent per annum. After the expiration of that period, the loan with interest is repayable within 20 years in half-yearly instalments of £4 0s. 3d. (which includes interest) for every £100 advanced. Advances made on the security of leases of grazing selections must be repaid with interest at 5 per cent. per annum, within a term not later than the date upon which the lease will expire.

(iii) *Discharged Soldiers' Settlement Act.* Advances may be made by the Minister to discharged soldiers who are owners of land in fee-simple or holders of land under tenure from the Crown. Such advances may be made for the purposes of (a) the payment of purchase-money; (b) the payment of existing liabilities; (c) making improvements; (d) purchasing live stock, machinery, trees, etc.; or (e) any other approved purpose. No advance to any one person may exceed £1,200. The first portion of the advance, which must not exceed £625, nor the fair value of the holding and improvements, is repayable with interest by instalments within 40 years. The rate of interest for the first year is $3\frac{1}{2}$ per cent., and it increases annually by $\frac{1}{2}$ per cent. until the rate equals the actual rate (not exceeding 5 per cent.) payable by the State in respect of the loan out of which such advance was made. The balance of the loan, up to £575, may be advanced for a term of 25 years, repayable with interest at 5 per cent., but must not exceed fifteen shillings in the pound of the estimated value of the land and improvements. Advances may be also made on short terms for the purchase of live stock, plants, vehicles, implements, seeds, etc.

(iv) *Co-operative Agricultural Production Act.* The Minister may make advances to any co-operative company for the construction of works for the manufacture and storage of primary products of agriculture. Such advances may be made up to two-thirds of the entire cost of the works and machinery. An advance may be granted only on the condition that the articles of association of the company provide that at least two-thirds of the shares are held by primary producers, and that no greater dividend than 6 per cent. shall be paid before any advance has been repaid. The Minister takes as security a mortgage over the works, together with any available collateral security, such as a bill of sale over the machinery, etc. The repayments are spread over a period of sixteen years, with interest at 5 per cent. per annum. For the first two years interest only is payable, and for the remaining fourteen years the sum of £10 2s. 1d. must be repaid annually for every £100 advanced.

Advances may also be made to farmers, dairy farmers, or sheep farmers, for the following purposes and on the following terms:—(a) purchase of dairy cattle, £200, term seven years; (b) purchase of pigs, £50, term three years; (c) purchase of sheep, £200, term two years; and (d) erection of silos, £150, term five years. The advances for the purchase of dairy cattle, pigs, and sheep, may be made on the security of a stock mortgage only, but advances for the erection of silos must be secured by a mortgage over the property.

(v) *Amount of Advances.* The following table gives particulars of advances and amounts outstanding:—

ADVANCES TO SETTLERS.—QUEENSLAND, 1921–22.

Act under which Advances were made.	Advances made during Year 1921–22.	Total Advances made to 30th June, 1922.	Amount Outstanding at 30th June, 1922.
	£	£	£
State Advances Act	155,311	2,988,320	1,845,171
Co-operative Agricultural Production and Advances to Farmers Acts	12,543	37,212	32,878
Discharged Soldiers' Settlement Act (Soldiers' Group Settlements only)	294,387	1,096,964	1,084,201
Total	462,241	4,122,496	2,962,250

4. **South Australia.**—(i) *General.* Advances may be made to settlers and others for the purpose of discharging mortgages, making improvements, etc., under the provisions of several Acts, which are briefly summarized hereunder. Loans may be made for the purchase of fencing materials in vermin-infested districts under the Loans for Fencing Act and the Vermin Act.

(ii) *Crown Lands Act.* Advances may be made to homestead blockholders (a) for erecting buildings; or (b) for making improvements on their land. A loan must not exceed in the case of (a) the cost of existing improvements; and in the case of (b) one-half the value of the improvements to be effected; and in no case may a loan exceed £50. Repayment is to be made in twenty equal annual instalments at the rate of £7 7s. 2d. per cent. of the amount advanced.

(iii) *Advances to Settlers on Crown Lands Act.* The Advances to Settlers Board may make advances to any settler on the security of his land and improvements (a) for making improvements, up to the estimated value of his lease or agreement and improvements, not exceeding £400, and up to three-fourths of such value in excess of £400, but not exceeding £250; or (b) for stocking his holding, up to £200; or (c) for discharging an existing mortgage, up to three-fourths of the value of his lease or agreement and improvements; or (d) for any other purpose, up to the same amount. Repayment must be made by 70 equal half-yearly instalments, with interest, but for the first five years interest only is payable.

(iv) *State Advances Act.* Under this Act the State Bank of South Australia was established, with power to make advances to farmers and other producers, to local authorities, to persons possessed of the necessary securities, and in aid of industries. Loans to farmers and other producers and in aid of industries are made upon the security of lands in fee-simple or of Crown leases, and, in the case of freehold land, must not exceed three-fifths of the unimproved value in fee-simple of the land and permanent improvements, or, if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, then plus one-third of such additional value, or, in the case of a Crown lease, one-half of the selling value thereof, with improvements. No single advance may exceed £5,000. The Bank and the borrower may agree upon the term of years, not exceeding 42, over which repayment may be spread, as well as the interest to be paid.

(v) *Irrigation Act.* Settlers under this Act are entitled to loans under the Advances to Settlers on Crown Lands Act, as well as under the Irrigation Act, but not exceeding £600 under both Acts. The Irrigation Commission may make advances to lessees (a) not exceeding the value of the lease and improvements thereon, for clearing, fencing, etc., for constructing channels and drains, or for the erection of buildings; (b) up to £200 for the purchase of implements, stock, etc.; and (c) not exceeding three-fourths of the aggregate value of the lease and improvements, for the discharge of a mortgage, or any other purpose. The Commission may also, upon the application of the lessee, expend a sum not exceeding £30 per acre of the irrigable land in each block in fencing, clearing, grading, constructing channels, drains and tanks, 15 per cent. of the estimated cost to be lodged with the application. The maximum sum which may be advanced with respect to any one piece of land within an irrigation area is £600, or £30 per acre of the irrigable portion, whichever is the greater. Advances may be made only on the security of a first mortgage. During the first five years interest only is payable, but thereafter the advance must be repaid in 70 equal half-yearly instalments, with interest.

(vi) *Loans to Producers Act.* The Minister may, on the security of a mortgage on the property, make loans to any registered co-operative society, three-fourths of the members of which are engaged in, or are about to be engaged in, rural production, for any of the following purposes:—Class A (1) the erection or purchase of cool stores; or (2) the erection or purchase of factories for jam making, and for canning, drying, and otherwise preserving fruit or vegetables; or (3) the erection or purchase of fruit-packing sheds; or (4) the erection or purchase of butter, cheese, or bacon factories; or (5) the erection or purchase of wineries or distilleries; or (6) the erection of silos; Class B (1) the purchase of fruit-grading machinery; or (2) the installation of irrigation plants; or (3) any other prescribed purpose. Loans may also be made to any land-holder for any of the last

three named purposes. Repayment of loans, with interest, must be in equal half-yearly instalments, spread over a period of twenty years, under Class A, and of seven years under Class B. Under Class A, interest only is payable for the first two years of the currency of the loan, the repayment by 36 half-yearly instalments of principal and interest commencing on the first day of the thirty-first month from the making of the loan. Under Class B, repayment of both principal and interest commences on the first day of the seventh month from the date of making the loan.

(vii) *Discharged Soldiers Settlement Act.* An advance may be made to any discharged soldier settler for (a) clearing, fencing, etc.; (b) the erection of buildings on the land; (c) the purchase of implements, stock, etc.; (d) the payment of rent in arrear; (e) the discharge of any encumbrance or mortgage on the land; (f) paying off any debt incurred prior to enlistment or during his absence on active service. The last three purposes apply only to holders of certain classes of tenure. Repayment may be made in the cases of (c) and (f) in seven yearly or fourteen half-yearly instalments; or, in the cases of (a), (b), or (e), in 40 yearly or 80 half-yearly instalments; or, in the case of (d), as the Minister determines. The rate of interest is fixed by the Minister, but no interest is payable for the first year, $2\frac{1}{2}$ per cent. for the second, $3\frac{1}{2}$ per cent. for the third, and 5 per cent. for the fourth year.

(viii) *Agricultural Graduates Land Settlement Act.* Under the provisions of this Act, the Minister may (a) purchase land with a view to the settlement thereon of an agricultural graduate, the value of which land, with improvements, must not exceed £3,000 for each graduate, and is repayable with interest; (b) advance to any agricultural graduate settler up to £500 for the purpose of purchasing seeds, implements, stock, etc., such advance being repayable as follows:—During the first three years interest only is payable, and thereafter the whole is to be repaid in twelve equal half-yearly instalments; (c) in uncleared Mallee country make advances up to £1,000, but not to exceed pound for pound in value of the improvements effected.

(ix) *Amount of Advances.* The following table gives particulars respecting advances etc., to 30th June, 1922:—

ADVANCES TO SETTLERS.—SOUTH AUSTRALIA, 30th JUNE, 1922.

Particulars.	Advances during 1921-22.	Total Advances.	Balance at 30th June, 1922.
	£	£	£
Department of Lands and Surveys—			
Advances to soldier settlers	1,093,306	2,591,530	2,458,182
Advances to settlers for improvements	19,935	571,871	431,441
Advances under Vermin and Fencing Act	22,914	753,991	222,194
Advances to blockholders .. ..	..	41,411	837
Advances for sheds and tanks	13,999	51,276	49,071
Advances in drought-affected areas .. ..	..	763,449	75,775
Advances under Loans to Producers Act	2,253	17,487	17,383
State Bank of South Australia	1,468,618	9,957,345	5,873,395
Irrigation Commission	4,193	89,601	60,266
Total	2,625,218	14,837,961	9,188,544

5. **Western Australia.**—(i) *General.* Advances to settlers are made by the Agricultural Bank, which was established in 1895. Special advances are also made to returned soldiers.

(ii) *Agricultural Bank.* This bank makes advances to a limit of £2,000 on the security of a first mortgage to persons engaged in agricultural pursuits. Advances are repayable over a period of thirty years. Interest is payable in half-yearly instalments during the first ten years, and repayments of principal with interest are payable, also in half-yearly instalments, during the balance of the redemption period above quoted.

Stock and machinery loans are repayable over a period of eight years. The interest charged is at the ruling rate, which must not exceed 7 per cent. per annum.

(iii) *Advances to Soldier Settlers.* Interest on advances up to £625 granted to soldier settlers is charged at the rate of $3\frac{1}{2}$ per cent. for the first year, rising by $\frac{1}{2}$ per cent. per annum until the ruling bank rate is reached. The maximum amount which may be advanced to a soldier settler is £2,000. A recent amendment of the Agricultural Bank Act empowers the granting of £500 over and above this figure to soldier settlers for the clearing of land only.

(iv) *Amount of Advances.* The following table gives the amounts advanced by the Agricultural Bank, together with the amounts outstanding, in 1922 :—

ADVANCES TO SETTLERS.—WESTERN AUSTRALIA, 1921–22.

Particulars.	Year ended—	Advanced during Year.	Total Amount Advanced.	Outstanding at end of Year.
		£	£	£
Agricultural Bank advances ..	30.6.22	226,061	4,295,984	3,055,717
Soldier settlement advances ..	30.6.22	..	3,824,168	3,948,068
Advances to assisted settlers ..	31.3.22	1,018,085	6,101,075	1,200,391
Total .. ..	..	1,244,146	14,221,227	8,204,176

6. *Tasmania.*—(i) *General.* Advances to farmers and producers may be made under the State Advances Act, to closer settlement settlers under the Closer Settlement Act, to fruit-growers formed into a registered company under the Advances to Fruit-growers Act, and to returned soldiers under the Returned Soldiers Settlement Act.

(ii) *State Advances Act.* The Agricultural Bank of Tasmania, constituted under this Act, is authorized to borrow up to £150,000 on debentures or stock for the purpose of advancing money to farmers and other primary producers who own land in fee-simple or under purchase from the Crown on credit. Advances are secured on first mortgages, and may be made for any of the following purposes :—(a) the payment of existing liabilities ; (b) agricultural, dairying, or grazing or horticultural pursuits ; (c) making the prescribed improvements on the holding ; or (d) adding to improvements already made. No advance may be granted for less than £25 nor for more than £1,000 to any one person, nor may an advance exceed (a) one-half of the capital value of land held under purchase on the credit system, less the amount of instalments due ; or (b) three-fifths of the capital value of freehold land. The repayment of advances commences after five years, and the borrower must repay one-fiftieth of the principal sum half-yearly thereafter until the whole amount of the advance is repaid. Interest is payable half-yearly at the rate fixed by the Treasurer.

(iii) *Closer Settlement Act.* Under this Act the Minister may make advances to lessees in aid of the cost of fencing, draining, erecting buildings, and other improvements. The total amount advanced may not exceed pound for pound of the sum expended by the lessee in such improvements. Loans are repayable by equal half-yearly instalments with interest, not exceeding 7 per cent., extending over a period not exceeding 21 years.

(iv) *Advances to Fruit-growers Act.* The Minister may advance to registered companies on a first mortgage on freehold land or on a lien on other property, money for all or any of the following purposes :—(a) the purchase of land on which a packing shed or pulping works is or are to be erected ; (b) the erection of packing sheds ; (c) the erection of pulping works ; (d) the purchase of pulping works ; or (e) the purchase of fruit-grading machinery. Generally, the amount of advance must not exceed 75 per cent. of the value of the land or plant, but, in the case of a company desiring to purchase grading machinery, it must not exceed 50 per cent. of the value thereof. Advances are repayable in equal half-yearly instalments of principal and interest combined extending over a period of ten years, at the rate of £6 14s. 5d. for every £100 borrowed. Any company to which an advance is made may issue debentures for the purpose of securing the repayment of principal and interest.

(v) *Returned Soldiers Settlement Act.* Advances up to £625 may be made to discharged soldiers (a) for clearing, fencing, and general improvement of land disposed of under the Returned Soldiers Settlement Act; (b) for the erection of buildings, not exceeding £450, thereon; or (c) for the purchase of implements, stock, seeds, etc. Repayment must be made at the prescribed times, and in the prescribed manner. The Minister may also remit wholly or in part the payment of rent or of instalments on the purchase-money.

A returned soldier, who has not exercised his option of acquiring a free selection, and who is already a selector of land on credit purchase, is entitled to a remission of his instalments up to £100.

(vi) *Amount of Advances.* The following table shows the amount advanced during the year ended 30th June, 1922, the total amount advanced to that date, and the amount of loans outstanding:—

ADVANCES TO SETTLERS.—TASMANIA, 30th JUNE, 1922.

Authority making Advances.			Advances made during the Year.	Total advances to 30th June, 1922.	Amounts Outstanding on 30th June, 1922.
			£	£	£
Agricultural Bank..	..	..	9,249	150,156	89,738
Minister for Lands	..	..	104,872	561,341	457,239
Total ..	..	..	114,121	711,497	546,977

7. *Northern Territory.*—(i) *Advances to Settlers Ordinance.* Under this Ordinance the Advances to Settlers Board may, out of moneys voted by Parliament for the purpose, make loans to any person who is residing in the Northern Territory, and who is the holder of any land (a) under freehold or leasehold tenure from the Crown; or (b) under conditional purchase, for the purpose of (a) making improvements on the land; (b) purchasing implements or plant; (c) stocking the holding; or (d) paying off mortgages or other charges. An advance to one person may not exceed £800, and is secured by mortgage on the borrower's estate. For the first five years following the date on which the advance is made interest at the rate of 4 per cent. must be paid annually, and at the expiration of that period the amount of the advance, with 4 per cent. interest, must be repaid by 25 equal yearly instalments.

(ii) *Amount of Advances.* During the financial year 1921–22 the sum of £305 was advanced, making the total amount advanced to the 30th June, 1922, £1,971. The balance outstanding at that date, including interest, was £2,139.

8. *Summary of Advances.*—The following table gives a summary for each State to the 30th June, 1922:—

ADVANCES TO SETTLERS.—AUSTRALIA, 30th JUNE, 1922.

State.	Advances during Year.	Total Advances.	Balance Outstanding.
	£	£	£
New South Wales	2,320,865	8,550,973	5,253,958
Victoria	6,034,835	34,877,040	27,755,672
Queensland.. ..	462,241	4,122,496	2,962,250
South Australia	2,625,218	14,837,961	9,188,544
Western Australia	1,244,146	14,221,227	8,204,176
Tasmania	114,121	711,497	546,977
Northern Territory	305	1,971	2,139
Total	12,801,731	77,323,165	53,913,716

§ 11. Alienation and Occupation of Crown Lands in the Several States.

1. **General.**—The tables given in the previous parts of this Chapter show separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below show collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (b) the area in process of alienation, comprising holdings for which the fee-simple has not yet been alienated, but which are in process of sale under systems of deferred payments; (c) the area occupied under all forms of leases and licences; and (d) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, etc. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licences, so that in such cases the areas reserved are comprised in class (c) and not in class (d). Particulars of leases and licences of reserved areas, as distinguished from leases and licences of other lands, are not available. It should be observed that in many cases lands occupied under leases or licences for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—At the 30th June, 1922, of the total area of New South Wales, 22 per cent. had been alienated absolutely, 11½ per cent. was in process of alienation, and 58 per cent. was held under leases and licences. During the year 1921–22, a total area of 790,516 acres was made available for Crown leases, homestead farms, etc. Of this area, 6,369 acres were made available for irrigation farms and allotments, and 19,423 acres were acquired under the promotion section of the Closer Settlement Act. In addition, 945,979 acres were made available for soldier settlement.

The following table gives particulars for the five years ending 30th June, 1918, to 1922 :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—NEW SOUTH WALES, 1918 TO 1922.

Particulars.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. Alienated.					
Granted and sold prior to 1862	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and other sales, 1862 to date	14,922,516	14,933,719	14,849,209	15,182,649	15,184,016
Conditionally sold, 1862 to date	17,318,124	17,887,903	18,564,288	19,228,810	19,970,073
Granted under Volunteer Land Regulations, 1867 to date	172,198	172,198	172,198	172,198	172,198
Granted for public and religious purposes	239,840	240,222	240,915	241,417	241,742
Homestead selections and grants	1,055,915	985,914	912,573	895,330	895,298
Total	40,855,172	41,366,535	41,885,762	42,866,983	43,609,906
2. In Process of Alienation.					
Under system of deferred payments	19,225,824	19,435,807	19,365,856	18,672,521	18,437,590
Closer settlement purchases	1,244,203	1,288,407	1,510,568	1,995,225	2,385,411
Total	20,470,027	20,724,214	20,876,424	20,667,746	20,823,001
3. Held under Leases and Licences.					
Total under Lands Department and Western Land Board	116,159,073	115,110,607	115,631,338	115,246,873	114,554,764
Mineral and auriferous leases and licences (Mines Department) ..	231,981	225,134	229,884	268,851	281,503
Total	116,391,054	115,335,741	115,861,222	115,515,724	114,836,267
4. Unoccupied	20,320,247	20,610,010	19,413,092	18,986,047	18,767,326

Area of State—198,036,500 acres.

3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which about 44 per cent. had been alienated absolutely up to the end of the year 1921; 15.6 per cent. was in process of alienation under deferred payments and Closer Settlement Schemes; 16 per cent. was occupied under leases and licences; while a little over 24 per cent. was unoccupied.

ALIENATION AND OCCUPATION OF CROWN LANDS.—VICTORIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. <i>Alienated</i>	24,427,467	24,503,531	24,605,825	24,793,053	24,903,109
2. <i>In Process of Alienation</i> —					
Exclusive of Mallee, etc. ..	2,059,101	2,051,422	2,022,373	1,937,933	1,933,656
Mallee Lands	5,500,708	5,511,340	6,259,742	6,274,011	6,303,229
Under Closer Settlement Acts ..	518,068	527,237	514,128	520,003	528,545
Village Settlements	18,175	16,888	15,235	14,155	12,694
Total	8,096,052	8,106,887	8,811,478	8,746,102	8,778,124
3. <i>Leases and Licences Held</i> —					
Under Lands Department ..	12,383,810	10,649,247	10,944,854	9,991,558	8,940,521
Under Mines Department ..	88,599	76,799	69,165	48,561	52,892
Total	12,472,409	10,726,046	11,014,019	10,040,119	8,993,413
4. <i>Unoccupied Crown Lands</i> ..	11,249,832	12,909,296	11,814,438	12,666,486	13,571,114

Total area of State—56,245,760 acres.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1921, about 4 per cent. was alienated absolutely; about 2 per cent. was in process of alienation; and about 71 per cent. was occupied under leases and licences. The remainder was either unoccupied or held as reserves, or for roads.

The distribution is shown in the following table:—

ALIENATION AND OCCUPATION OF CROWN LANDS.—QUEENSLAND, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. <i>Alienated Absolutely.</i>					
By Purchase	16,583,135	16,684,981	16,806,983	16,935,558	17,064,697
Without Payment	86,702	86,736	86,736	86,742	87,731
Total	16,669,837	16,771,717	16,893,719	17,022,300	17,152,428
2. <i>In Process of Alienation</i> ..	10,215,839	9,763,261	9,064,089	8,659,280	8,280,296
3. <i>Occupied under Leases and Licences.</i>					
Pastoral Leases	211,581,200	212,439,720	211,030,440	209,248,960	201,010,760
Occupation Licences	40,929,360	40,694,600	36,590,960	33,830,400	33,526,240
Grazing Farms and Homesteads	67,292,732	71,091,155	76,437,422	79,397,073	78,658,048
Scrub Selections	206,154	206,153	166,899	112,137	86,289
Leases Special Purposes	186,592	202,364	210,201	218,563	246,783
Under Mines Department	241,647	279,396	333,834	342,880	422,368
Perpetual Lease Selections	527,133	954,623	2,005,337	2,694,626	3,060,954
Auction Perpetual Leases	5,278	7,041	7,943	9,135	10,001
Total	320,970,096	325,875,052	326,783,036	325,853,774	317,021,443
4. <i>Unoccupied</i>	81,264,228	76,709,970	76,379,156	77,584,646	86,665,833

Total area of State—429,120,000 acres.

5. **South Australia.**—The area of the State of South Australia is 243,244,800 acres. In this State, at the end of the year 1922, there was about 4.5 per cent. alienated absolutely; about 1.3 per cent. in process of alienation; about 48.1 per cent. occupied under leases and licences; and 46.1 per cent. unoccupied. The subjoined table shows the distribution:—

**ALIENATION AND OCCUPATION OF CROWN LANDS.—SOUTH AUSTRALIA,
1918 TO 1922.**

Particulars.	1918.	1919.	1920.	1921.	1922.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. <i>Alienated</i> —					
Sold	10,655,953	10,727,484	10,801,634	10,882,906	10,936,750
Granted for Public Purposes	129,988	130,332	130,332	131,191	131,741
Total	10,785,941	10,857,816	10,931,966	11,014,097	11,068,491
2. <i>In Process of Alienation</i> ..	3,025,166	3,038,084	3,166,524	3,192,633	3,023,556
3. <i>Held under Lease and Licence</i> —					
Right of Purchase Leases	2,402,355	2,329,100	2,285,421	2,202,841	2,112,350
Perpetual Leases	14,625,839	14,650,223	14,880,901	14,849,184	14,756,565
Pastoral Leases	95,264,050	96,358,450	100,904,690	102,832,050	98,760,263
Other Leases and Licences	617,654	806,029	880,420	909,764	886,989
Mining Leases and Licences	171,170	144,347	603,298	642,570	512,841
Total	113,081,068	114,288,149	119,554,730	121,436,409	117,029,008
4. <i>Area Unoccupied</i>	116,352,625	115,060,751	109,591,580	107,601,661	112,123,745

Total area of State—243,244,800 acres.

6. **Western Australia.**—The total area of Western Australia is 624,588,800 acres, of which, at the 30th June, 1922, about 1½ per cent. was alienated absolutely; about 2½ per cent. was in process of alienation; while nearly 43 per cent. was occupied under leases and licences issued either by the Lands or the Mines Departments. The balance of 53 per cent. was unoccupied. In 1921–22 forests leases and permits were issued by the Forestry Department.

The following table shows the distribution:—

**ALIENATION AND OCCUPATION OF CROWN LANDS.—WESTERN AUSTRALIA,
1918 TO 1922.**

Particulars.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. <i>Alienated Absolutely</i> ..	8,462,085	8,605,479	8,763,051	9,197,088	9,724,931
2. <i>In Process of Alienation</i> —					
Midland Railway Concessions	54,800	54,800	54,800	54,800	54,800
Free Homestead Farms ..	1,288,866	1,228,844	1,186,438	1,017,255	941,485
Conditional Purchases ..	7,504,457	7,422,504	7,571,189	7,544,062	7,615,430
Selections from the late W.A. Company	2,290	2,193	2,193	2,193	2,193
Selections under the Agricultural Lands Purchase Act	247,196	280,250	427,465	485,129	539,927
Special Occupation Leases and Licences	1,398	1,298	1,298	1,298	1,298
Homestead or Grazing Leases	3,962,833	4,204,301	4,973,656	5,887,426	6,833,398
Poison Land Leases or Licences	43,275	43,275	42,274	42,275	42,275
Village Allotments ..	31	30	30	29	28
Working-men's Blocks ..	482	452	426	492	342
Total	13,105,628	13,237,947	14,259,769	15,034,959	16,031,176

ALIENATION AND OCCUPATION OF CROWN LANDS.—WESTERN AUSTRALIA, 1918 TO 1922—*continued.*

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
3. Leases and Licences in Force—					
(i) Issued by Lands Department—					
Pastoral Leases ..	204,820,869	241,679,020	253,436,312	254,688,286	263,403,351
Special Leases ..	38,285	53,584	62,348	57,156	57,509
Leases of Reserves ..	1,629,115	2,139,541	2,391,571	1,988,713	2,156,186
Residential Lots ..	269	269	285	272	4,422
(ii) Issued by Mines Department—					
Gold Mining Leases ..	12,060	10,311	20,148	24,540	8,934
Mineral Leases ..	38,210	40,459	41,387	41,843	46,056
Miners' Homestead Leases	39,785	36,699	36,181	36,401	35,828
Timber Leases and Concessions ..	625,300	625,186	625,186	590,314	585,453
Timber Permits ..	845,117	819,520	996,882	1,076,809	1,322,168
Total	208,049,010	245,404,589	257,610,300	258,504,334	267,619,907
4. Area Unoccupied	394,972,077	357,340,785	343,955,680	341,852,419	331,212,786

Total area of State—624,588,800 acres.

7. *Tasmania.*—Of the total area of Tasmania, at the end of the year 1921 about 31 per cent. had been alienated absolutely ; about 5½ per cent. was in process of alienation ; about 14½ per cent. was occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes, or for closer or soldier settlement, or occupied or reserved by the Crown ; the remainder being unoccupied. The following table shows the distribution :—

ALIENATION AND OCCUPATION OF CROWN LANDS.—TASMANIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. Alienated Absolutely	5,155,511	5,197,283	5,241,292	5,241,856	5,259,066
2. In Process of Alienation	1,184,061	1,122,797	1,054,111	963,915	920,206
3. Leases or Licences—					
(i) Issued by Lands Department—					
Islands ..	197,406	197,918	151,000	107,000	108,000
Ordinary Leased Land ..	1,193,169	1,201,169	1,341,000	1,540,000	1,608,000
Land Leased for Timber ..	155,889	183,804	218,784	230,524	236,847
Closer Settlement ..	69,087	68,163	68,163	68,192	80,435
Soldier Settlement ..	3,430	17,556	60,223	162,516	219,118
Other Leases ..	..	..	..	1,000	1,000
(ii) Issued by Mines Department ..	54,391	46,600	46,491	46,380	52,476
(iii) Occupied by Commonwealth and State Departments	17,150	17,206	18,000	18,000	18,000
(iv) Reserved for Public Purposes ..	99,500	100,000	100,000	100,000	100,000
Total	1,790,022	1,832,416	2,003,661	2,273,612	2,423,876
4. Area Unoccupied	8,648,006	8,625,104	8,478,536	8,298,217	8,174,452

Total area of State—16,777,600 acres.

8. Northern Territory.—At the end of the year 1921 only 0.14 per cent. was alienated absolutely; 41.09 per cent. was held under leases and licences; while the remaining 58.77 per cent. was unoccupied. The following table shows the distribution:—

ALIENATION AND OCCUPATION OF CROWN LANDS.—NORTHERN TERRITORY, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	Acres.	Acres.	Acres.	Acres.	Acres.
1. Alienated—					
Sold	475,494	476,428	476,428	476,508	476,508
Granted for Public Purposes ..	48	48	48	48	48
Total Alienated ..	475,542	476,476	476,476	476,556	476,556
2. Leased—					
Right of Purchase ..	436	436	436	356	356
Pastoral	103,993,600	64,964,864	93,669,760	106,503,680	119,069,760
Other Leases	108,387	41,365,975	29,048,010	36,770,115	(b) 18,606,537
Total Leases	104,102,423	106,331,275	122,718,206	143,274,151	137,676,653
3. Unoccupied (a)	230,538,835	228,309,049	211,922,118	191,366,093	196,963,591

Total area of Northern Territory—335,116,800 acres.

(a) Including Aboriginal and other reserves, and Mission stations.
(b) Including also pastoral holdings other than pastoral leases.

§ 12. Classification of Alienated Holdings According to Size.

1. General.—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns showing such a classification are not available for Queensland and the Northern Territory.

The following table gives particulars of the number and areas of holdings of alienated lands and land in process of alienation in area series, as returned to the collectors of agricultural and pastoral statistics, for all the States excepting Queensland, and for the Federal Capital Territory, to the latest available date. Lands held under lease or licence are not included.

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES.

Size of Holdings.	N.S.W. 1920–21.	Victoria. 1918–19.	S. Aust. 1921–22.	W. Aust. 1921–22.	Tasmania. 1921–22.	Federal Capital Territory. 1920–21.
NUMBER.						
Acres.						
1 to 50	16,556	20,866	7,165	4,423	4,544	4
51 " 100	7,841	8,036	1,825	756	2,523	5
101 " 500	26,278	26,246	6,109	2,919	5,420	26
501 " 1,000	10,789	11,224	4,319	3,116	776	18
1,001 " 5,000	9,463	5,865	4,244	4,900	743	17
5,001 " 10,000	1,066	290	125	308	127	5
10,001 " 20,000	487	117	38	93	60	..
20,001 " 50,000	229	35	15	22	32	1
50,001 and over	71	..	..	4	5	..
Total	72,780	72,679	23,840	16,541	14,230	76
AREA.						
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 to 50	361,854	370,426	117,818	58,231	76,500	128
51 " 100	605,855	572,349	136,948	63,316	174,550	395
101 " 500	6,889,295	6,517,118	1,725,600	760,862	1,117,720	6,996
501 " 1,000	7,582,944	7,763,815	3,085,518	2,559,309	535,610	13,382
1,001 " 5,000	18,770,706	10,117,530	7,243,776	9,807,991	1,591,000	31,576
5,001 " 10,000	7,297,565	1,996,606	809,522	2,109,326	893,000	34,009
10,001 " 20,000	6,604,423	1,621,460	510,799	1,305,068	762,700	..
20,001 " 50,000	6,660,679	1,016,847	351,739	624,752	869,000	22,050
50,001 and over	6,267,129	..	..	320,415	385,000	..
Total	61,040,450	29,976,151	13,981,720	17,609,270	6,405,080	108,536

2. **Classification of Holdings.**—The next table gives the numbers of holdings of alienated lands, and of lands in process of alienation, arranged in groups, in the various States for which such figures are available for the last five years. In the case of New South Wales, prior to 1919–20, many holdings, nearly all from 1 to 5 acres in extent, which were not used for agricultural or pastoral purposes were included. In Victoria data are not collected annually. No details are available for Queensland.

**CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER).
NEW SOUTH WALES.**

Size of Holdings.		1914–15.	1915–16.	1918–19.	1919–20.	1920–21.
	Acres.	Number.	Number.	Number.	Number.	Number.
1 to	50	39,602	40,033	41,732	22,404	16,556
51 „	100	8,771	8,586	8,291	8,251	7,841
101 „	500	26,576	26,405	25,978	26,323	26,278
501 „	1,000	9,068	9,326	9,982	10,362	10,789
1,001 „	5,000	7,777	7,971	8,723	9,105	9,463
5,001 „	10,000	928	942	1,014	1,045	1,066
10,001 „	20,000	389	411	455	485	487
20,001 „	50,000	231	233	233	229	229
50,001 and over	..	78	76	72	75	71
Total	..	93,420	93,983	96,480	78,279	72,780

VICTORIA.

Size of Holdings.		1906.	1908.	1910.	1912.	1919.
	Acres.	Number.	Number.	Number.	Number.	Number.
1 to	50	13,309	14,692	16,609	18,757	20,866
51 „	100	5,864	6,223	6,696	7,356	8,036
101 „	500	21,628	22,510	23,397	24,735	26,246
501 „	1,000	7,688	7,817	8,216	10,181	11,224
1,001 „	5,000	4,083	4,409	4,908	5,364	5,965
5,001 „	10,000	220	231	239	267	290
10,001 „	20,000	116	118	131	116	117
20,001 „	50,000	73	61	42	34	35
50,001 and over	..	6	4	2	1	..
Total	..	52,987	56,065	60,240	66,811	72,679

SOUTH AUSTRALIA.

Size of Holdings.		1916–17.	1918–19.	1919–20.	1920–21.	1921–22.
	Acres.	Number.	Number.	Number.	Number.	Number.
1 to	50	7,272	7,204	7,120	7,300	7,165
51 „	100	1,867	1,840	1,822	1,832	1,825
101 „	500	6,016	5,953	6,024	6,015	6,109
501 „	1,000	4,057	4,050	4,081	4,243	4,319
1,001 „	5,000	4,006	4,132	3,991	4,179	4,244
5,001 „	10,000	127	114	121	114	125
10,001 „	20,000	43	49	46	40	38
20,001 „	50,000	24	23	16	14	15
50,001 and over	..	..	..	..	..	..
Total	..	23,412	23,365	23,221	23,737	23,840

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER)—*continued*.

WESTERN AUSTRALIA.

Size of Holdings.			1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.		Number.	Number.	Number.	Number.	Number.
1 to	50	..	3,696	3,533	3,670	3,754	4,423
51 "	100	..	643	607	635	657	756
101 "	500	..	3,064	2,965	2,952	2,938	2,919
501 "	1,000	..	3,462	3,310	3,170	3,133	3,116
1,001 "	5,000	..	4,080	4,154	4,187	4,510	4,900
5,001 "	10,000	..	249	263	285	299	308
10,001 "	20,000	..	103	95	93	89	93
20,001 "	50,000	..	24	27	32	26	22
50,001 and over		..	3	4	4	6	4
Total	..	..	15,324	14,958	15,028	15,412	16,541

TASMANIA.

Size of Holdings.			1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.		Number.	Number.	Number.	Number.	Number.
1 to	50	..	4,606	4,636	4,546	4,539	4,544
51 "	100	..	2,348	2,363	2,428	2,521	2,523
101 "	500	..	5,163	5,196	5,237	5,412	5,420
501 "	1,000	..	788	793	771	776	776
1,001 "	5,000	..	723	728	731	738	743
5,001 "	10,000	..	125	126	130	128	127
10,001 "	20,000	..	56	57	62	60	60
20,001 "	50,000	..	33	33	31	32	32
50,001 and over		..	5	5	6	5	5
Total	..	..	13,847	13,937	13,942	14,211	14,230

§ 13. The Progress of Land Settlement, 1917 to 1921.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation under recent legislation may be gathered from the subjoined statement, which shows the condition of the public estate in each State at the end of each year from 1917 to 1921 inclusive. The effect of the land laws during the period has been generally to diminish the number of large holdings, at the same time restricting the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land is then divided for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to workers to acquire land, and special inducements have been offered to bona fide settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1921 the area alienated absolutely in the whole of Australia increased by 34,766,533 acres, or 45.7 per cent.; the area in process of alienation increased by 21,891,909 acres, or 62.4 per cent.; the area leased by 240,316,946 acres, or 33.3 per cent.; while the area unoccupied decreased by 296,975,388 acres, or 27.7 per cent.

AREAS ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE OR LICENCE AND UNOCCUPIED, 1917 TO 1921.

Year.	Alienated.		In Process of Alienation.		Held under Lease or Licence.		Occupied by the Crown or Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

NEW SOUTH WALES.—AREA, 198,036,500 ACRES.(a)

1917	40,661,225	20.53	19,847,737	10.02	117,239,952	59.20	20,287,586	10.25
1918	40,855,172	20.63	20,470,027	10.34	116,391,054	58.77	20,320,247	10.26
1919	41,366,535	20.89	20,724,214	10.46	115,335,741	58.24	20,610,010	10.41
1920	41,885,762	21.15	20,876,424	10.54	115,861,222	58.51	19,413,092	9.80
1921	42,866,983	21.64	20,667,746	10.44	115,515,724	58.33	18,986,047	9.59

VICTORIA.—AREA, 56,245,760 ACRES.

1917	24,427,467	43.43	8,096,052	14.39	12,472,409	22.17	11,249,832	20.01
1918	24,503,531	43.57	8,106,887	14.41	10,726,046	19.07	12,909,296	22.95
1919	24,605,825	43.75	8,811,478	15.66	11,014,019	19.58	11,814,438	21.01
1920	24,793,053	44.08	8,746,102	15.55	10,040,119	17.85	12,666,486	22.52
1921	24,903,109	44.28	8,778,124	15.60	8,993,413	15.99	13,571,114	24.13

QUEENSLAND.—AREA, 429,120,000 ACRES.

1917	16,669,837	3.88	10,215,839	2.38	320,970,096	74.80	81,264,228	18.94
1918	16,771,717	3.91	9,763,261	2.27	325,875,052	75.94	76,709,970	17.88
1919	16,893,719	3.94	9,064,089	2.11	326,783,036	76.15	76,379,156	17.80
1920	17,022,300	3.97	8,659,280	2.02	325,853,774	75.93	77,584,646	18.08
1921	17,152,428	4.00	8,280,296	1.93	317,021,443	73.88	86,665,833	20.19

SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.

1917	10,737,841	4.41	3,104,763	1.28	119,437,222	49.10	109,964,974	45.21
1918	10,785,941	4.44	3,025,166	1.24	113,081,068	46.49	116,352,625	47.83
1919	10,857,816	4.46	3,038,084	1.25	114,288,149	46.99	115,060,751	47.30
1920	10,931,966	4.50	3,166,524	1.30	119,554,730	49.15	109,591,580	45.05
1921	11,014,097	4.53	3,192,633	1.31	121,436,409	49.92	107,601,661	44.24

(a) To 30th June.

AREAS ALIENATED, IN PROCESS OF ALIENATION, ETC.—*continued.*

Year.	Alienated.		In Process of Alienation.		Held under Lease or Licence.		Occupied by the Crown or Unoccupied.	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.(a)

1917	8,276,084	1.32	13,284,721	2.13	192,735,253	30.86	410,292,742	65.69
1918	8,462,085	1.35	13,105,628	2.10	208,049,010	33.31	394,972,077	63.24
1919	8,605,479	1.38	13,237,947	2.12	245,404,589	39.29	357,340,785	57.21
1920	8,763,051	1.40	14,259,769	2.28	257,610,300	41.25	343,955,680	55.07
1921	9,197,088	1.47	15,034,959	2.41	258,504,334	41.39	341,852,419	54.73

TASMANIA.—AREA, 16,777,600 ACRES.

1917	5,155,511	30.73	1,184,061	7.06	1,790,022	10.67	8,648,006	51.54
1918	5,197,283	30.98	1,122,797	6.69	1,832,416	10.92	8,625,104	51.41
1919	5,241,292	31.24	1,054,111	6.28	2,003,661	11.94	8,478,536	50.54
1920	5,241,856	31.24	963,915	5.75	2,273,612	13.55	8,298,217	49.46
1921	5,259,066	31.35	920,206	5.48	2,423,876	14.45	8,174,452	48.72

NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

1917	475,542	0.14	..	..	104,102,423	31.07	230,538,835	68.79
1918	476,476	0.14	..	..	106,331,275	31.73	228,309,049	68.13
1919	476,476	0.14	..	..	122,718,206	36.62	211,922,118	63.24
1920	476,556	0.14	..	..	143,274,151	42.75	191,366,093	57.11
1921	476,556	0.14	..	..	137,676,653	41.09	196,963,591	58.77

FEDERAL TERRITORY.—AREA, 601,580 ACRES.

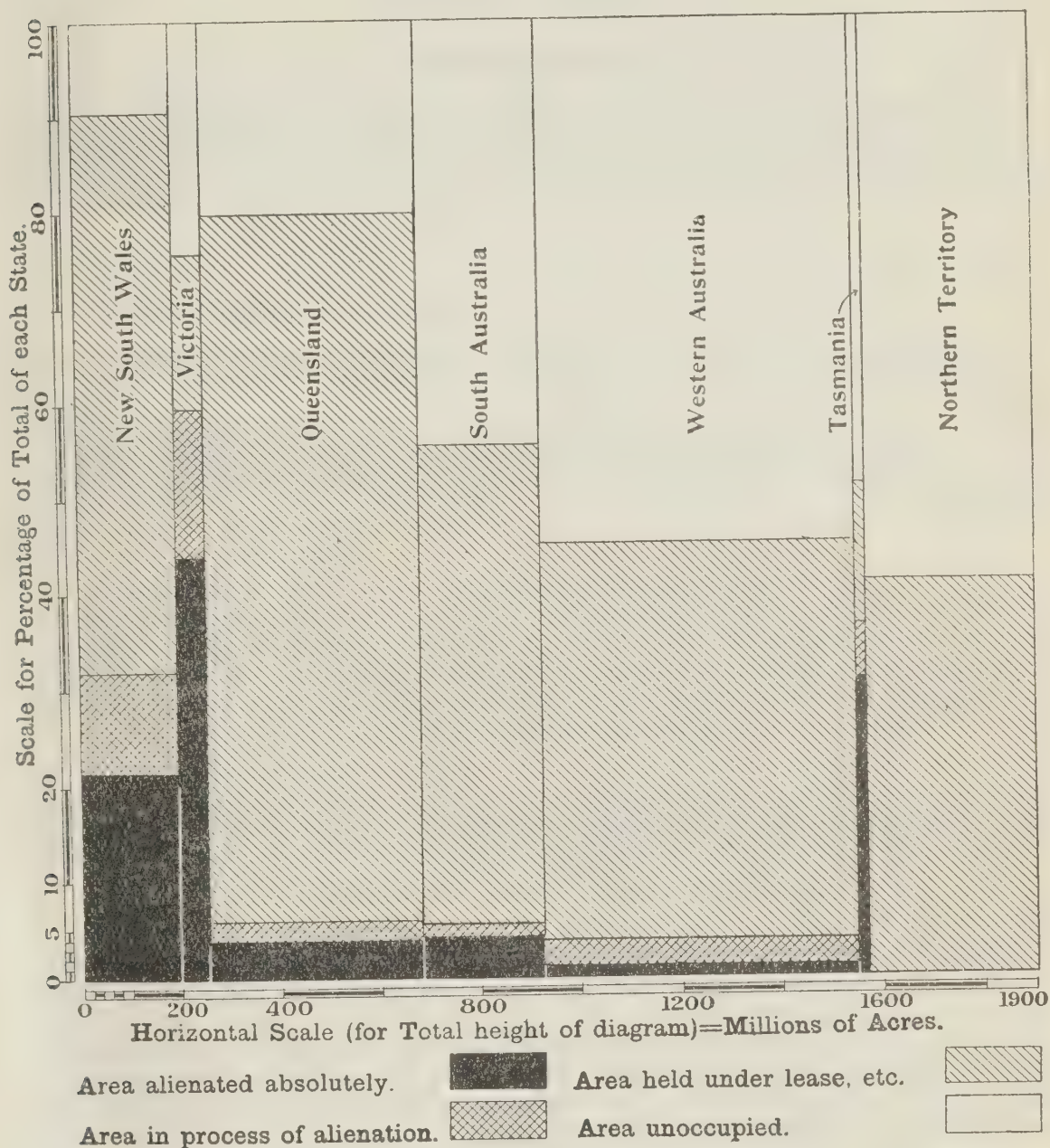
1917	41,000	6.82	79,322	13.18	177,309	29.47	303,948	50.53
1918	41,112	6.82	78,812	13.10	152,865	25.41	328,791	54.67
1919	41,269	6.86	79,124	13.15	152,386	25.32	328,801	54.67
1920	41,269	6.86	78,084	12.98	152,386	25.32	329,841	54.84
1921	39,967	6.64	78,064	12.98	152,378	25.32	331,171	55.06

AUSTRALIA.—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1917	106,444,507	5.59	55,812,496	2.93	868,990,307	45.65	872,484,530	45.83
1918	107,093,317	5.63	55,672,578	2.92	882,365,600	46.35	858,600,345	45.10
1919	108,088,411	5.68	56,009,047	2.94	937,675,530	49.25	801,958,852	42.13
1920	109,074,869	5.73	56,748,389	2.98	974,603,227	51.20	763,305,355	40.09
1921	110,909,294	5.82	56,952,028	2.99	961,724,230	50.52	774,146,288	40.67

(a) To 30th June.

2. **Diagram showing Condition of Public Estate.**—The following diagram shows the condition of the public estate at the end of the year 1921. The square itself represents the total area of Australia, while the relative areas of individual States are shown by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licences, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded :—



CHAPTER VI.

OVERSEA TRADE.

§ 1. Introductory.

1. **Constitutional Powers of the Commonwealth in regard to Commerce.**—The powers vested in the Commonwealth Parliament by the Commonwealth Constitution Act with respect to oversea trade and commerce will be found in sub-section 51 (i) and sub-sections 86 to 95 of the Act, which is printed in full in chapter I. of this volume.

§ 2. Commonwealth Legislation affecting Foreign Trade.

1. **General.**—In previous issues of the Year Book brief particulars of the various Commonwealth Acts and amendments thereof affecting foreign trade have been given in chronological order. It is not proposed to repeat this information in the present issue. The main provisions of the initial Commonwealth Customs Legislation and also of the principal Acts in operation at the present time affecting foreign trade are mentioned hereunder.

2. **Initial Commonwealth Customs Legislation.**—The first Commonwealth Act relating to Customs, entitled “Customs Act 1901 (No. 6 of 1901),” came into operation by proclamation on the 4th October, 1901. This Act provided for the establishment of the necessary administrative machinery for all matters pertaining to the Customs, and prescribed, *inter alia*, the manner in which Customs duties shall be computed and paid. It did not, however, determine the rates of duties.

During the interval between the establishment of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth under Section 86 of the Constitution.

The first Commonwealth Customs Tariff was introduced in the House of Representatives on the 8th October, 1901, and the “Customs Tariff Act 1902 (No. 14 of 1902)” was assented to on the 16th September, 1902. This Act made provision that uniform duties of Customs specified in the Tariff Schedule should be imposed from the 8th October, 1901. From this date, trade between the States became free, with the exception, that under Section 95 of the Constitution Act, the right was reserved to the State of Western Australia to levy duty on the goods from other States for five years. Prior to the establishment of the Commonwealth, a different tariff was in operation in each State, and interstate trade was subject to the same duties as oversea trade.

Several amendments of the Customs Tariff Schedule have been made since 1902. Particulars of these amendments have been furnished in previous issues of the Year Book.

3. **Customs Tariff 1921 (No. 25 of 1921.)**—The Tariff Schedule which is now in operation was submitted to Parliament on the 24th March, 1920, and the Act was assented to on the 16th December, 1921. The date of commencement of the imposition of the duties of Customs imposed by this Act was the 25th March, 1920. The Tariff Schedule provides a British Preferential Tariff, an Intermediate Tariff, and a General Tariff. The main provisions of the Act are mentioned hereunder:—

The rates of duty set out in the Schedule in the column headed “British Preferential Tariff” apply to goods the produce or manufacture of the United Kingdom, subject

to the condition that the goods have been shipped in the United Kingdom to Australia, and have not been transhipped, or, if transhipped, then only if it is proved satisfactorily that the intended destination of the goods, when originally shipped from the United Kingdom, was Australia (Section 8).

The provisions of the British Preferential Tariff may be applied wholly or in part to any part of the British Dominions, and the provisions of the Intermediate Tariff may be applied wholly or in part to any part of the British Dominions or to any foreign country.

The Act of 1921 repealed the following Acts:—Customs Tariff 1908 (No. 7 of 1908); Customs Tariff Amendment 1908 (No. 13 of 1908); Customs Tariff 1910 (No. 39 of 1910); Customs Tariff 1911 (No. 19 of 1911); and with the exception of the proposals contained in such Acts relating to the Tariff on goods imported from, and the produce or manufacture of, the Union of South Africa, the Customs Tariff Validation Act 1917, and the Customs Tariff Validation Act 1919.

The Tariff proposals assented to by the House of Representatives on the following dates ceased to have effect as from the time when the Act of 1921 was deemed to have come into operation:—

3rd December, 1914; 12th December, 1914; 9th June, 1915; 12th November, 1915; 10th August, 1917; 26th September, 1917; and 25th September, 1918.

The provisions of the Customs Tariff (South African Preference) 1906 (No. 17 of 1906) and the Tariff proposals relating to the Tariff on goods imported from, and the produce or manufacture of, the Union of South Africa agreed to in the House of Representatives on the 3rd December, 1914, and on 25th September, 1918, were not affected by the Act of 1921.

4. Customs Tariff 1922 (No. 16 of 1922).—This Act was assented to on the 28th September, 1922, and amended the Schedule to the Customs Tariff 1921. The items of import affected by the amendments to the Schedule were—wire, wire fencing, wire netting, traction engines, and alternating current-recording watt-hour meters.

5. Customs Tariff (Sugar) 1922 (No. 32 of 1922).—This Act was assented to on the 18th October, 1922, and amended the Schedule to the Customs Tariff 1921–1922. The amendments related to the duties on sugar, golden syrup and sugar syrups.

6. South African Preference.—By the Customs Tariff (South African Preference) 1906 it was provided that certain goods, specified in the Schedule to that Act, imported from, and the produce or manufacture of, any of the British South African Colonies or Protectorates included in the South African Customs Union, should be admitted to the Commonwealth at preferential rates as compared with the general rates then in force under the Schedule to the Customs Tariff 1902. Although the Schedule to the Customs Tariff 1902 has been repealed, subsequent enactments have provided for the continuance of the South African Preference. (*vide* Section 15 of Customs Tariff 1921.)

7. British Preference.—The Customs Tariff 1908 (No. 7 of 1908) made provision for preferential rates of Customs duties on certain goods the produce or manufacture of the United Kingdom. This Act was repealed by the Customs Tariff 1921 (No. 25 of 1921), the main provisions of which have already been mentioned.

8. New Zealand Preference.—The Customs Tariff (New Zealand Preference) 1922 (No. 3 of 1922) was assented to on the 23rd August, 1922, and repealed Act No. 27 of 1921. The Act was proclaimed on the 1st September, 1922, and the duties of Customs provided for in the Schedule of the Act came into force on and from that date. The Act provides

that the duties of Customs on goods imported direct from, and the produce or manufacture of, the Dominion of New Zealand shall be in accordance with the following rates:—

- (a) On all goods described in the Tariff Schedule against which rates of duty are set out in the column headed " Proposed Duties against New Zealand " the rates so set out.
- (b) On all goods other than those provided for in paragraph (a) the rates of duty for the time being applicable to goods to which the British Preferential Tariff applies.

The Act ratifies and confirms the agreement made on the 11th April, 1922, between the Commonwealth of Australia and the Dominion of New Zealand.

The Act provides that, from and after the 1st May, 1922, duties of Customs on goods not being the produce or manufacture of New Zealand which are imported into the Commonwealth from that Dominion and upon which, if they had been imported into the Commonwealth direct from the country of origin there would have been payable duties of Customs at the rates set out in the British Preferential Tariff shall be in accordance with the rates set forth in that particular tariff.

9. Tariff Board Act 1921 (No. 21 of 1921).—This Act, which was assented to on the 15th December, 1921, provides for the appointment of a Tariff Board consisting of three members, one of whom shall be an administrative officer of the Department of Trade and Customs. This member shall be appointed Chairman of the Board. The purpose of the Tariff Board is to assist the Minister in the administration of matters relating to trade and customs. The more important matters which the Minister shall refer to the Board for enquiry and report include the classification of goods for duty; the determination of the value of goods for duty; any disputes arising out of the interpretation of any Customs or Excise Tariff; the necessity for new, increased or reduced duties; the necessity for granting bonuses; any proposal for the application of the British Preferential Tariff or the Intermediate Tariff to any part of the British Dominions or any foreign country; and any complaint that a manufacturer is taking undue advantage of the protection afforded him by the tariff by charging unnecessarily high prices for his goods or acting in restraint of trade. The Minister may refer to the Board for enquiry and report the following matters:—the general effect of the working of the Customs Tariff and the Excise Tariff; the fiscal and industrial effects of the Customs laws of the Commonwealth; the incidence between the rates of duty on raw materials and on finished or partly finished products; and any other matter affecting the encouragement of primary and secondary industries in relation to the tariff.

It is provided that the Board shall, in the month of June in each year, report to the Minister generally as to the operation of the tariff and the development of industries, and shall in such report set out the recommendations made by the Board during the preceding twelve months.

10. Customs Tariff (Industries Preservation) Act 1921 (No. 28 of 1921).—This Act, assented to on the 16th December, 1921, provides that after inquiry and report by the Tariff Board, special duties shall be collected in the following cases when the importation of the goods referred to might be detrimental to an Australian industry. In the case of goods sold for export to Australia at a price less than the fair market price for home consumption or at a price which is less than a reasonable price, a special dumping duty shall be collected equal to the difference between the price at which the goods were sold and a fair market price. Similar provision is made for goods consigned to Australia for sale. With regard to goods exported to Australia at rates of freight less than the rates prevailing at the time of shipment, there shall be collected a dumping freight duty equal to 5 per cent. of the fair market value of the goods at the time of shipment. Special duties are also imposed in the case of goods imported from countries whose currency is depreciated. Provision is also made for the protection of the trade of the United Kingdom in the Australian market from depreciated foreign currency.

The Act provides that the Minister for Trade and Customs, after inquiry and report by the Tariff Board, may publish a notice in the *Commonwealth Gazette* specifying the

goods upon which special rates of duty under this Act shall be charged and collected. During the period August, 1922, to the end of April, 1923, 66 notices had been gazetted. With few exceptions action has been taken under Sections 9, and 10 of the Act. These sections provide for the imposition of special duties on imports from countries where the exchange value of the currency has depreciated, and by reason of such depreciation goods are being sold to an importer in Australia at prices which will be detrimental to an Australian industry, or at a price which is less than the fair market value of goods of like character or quality made in the United Kingdom. Fifty-three of these gazettals relate to goods imported from Germany, and cover a very wide range of commodities. Imports of enamelware, steel, and brushware from Czecho-Slovakia; brushware from Belgium; press-studs from Austria; portland cement and carbide of calcium from Norway; wire nails from United States, and barbed wire and staples from Japan have been gazetted under various sections of the Act as subject to special duties. Some of the original notices bringing certain commodities under the Act have been revoked and amended.

11. **Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).**—This Act was assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906. It gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. The imports to which a trade description must be applied are :— (a) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; (b) medicines or medicinal preparations for internal or external use; (c) manures; (d) apparel (including boots and shoes), and the materials from which apparel is manufactured; (e) jewellery; (f) agricultural seeds and plants.

§ 3. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond Australia as shown in the following tables represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent. in advance of their fair market value in the principal markets of the country whence the goods were exported. Acting upon a recommendation of the Tariff Board the section of the Customs Act relating to the valuation of imports was recently amended and Section 154 (1) of the Customs Act 1901–1922 now provides that “when any duty is imposed according to value, the value for duty shall be the sum of the following :—

- (a) (i) the actual money price paid or to be paid for the goods by the Australian importer plus any special deduction, or
- (ii) the current domestic value of the goods, whichever is the higher;
- (b) all charges payable or ordinarily payable for placing the goods free on board at the port of export; and
- (c) ten per centum of the amounts specified under paragraphs (a) and (b) of this sub-section.

“Current domestic value” is defined as “the amount for which the seller of the goods to the purchaser in Australia is selling or would be prepared to sell for cash, at the date of exportation of those goods, the same quantity of identically similar goods to any and every purchaser in the country of export for consumption in that country.”

Section 157 of the Customs Act provides that when the invoice value of imported goods is shown in any currency other than British currency, the equivalent value in British currency shall be ascertained according to a fair rate of exchange. Under this section it was the practice of the Department of Trade and Customs, until the 8th December, 1920, to convert on the basis of the mint par of exchange. Since the date mentioned, in consequence of a ruling of the High Court, all conversions have been based on the commercial rates of exchange. As the values for statistical purposes as well as those for duty purposes were based on the mint par, it follows that the recorded values of

imports from countries such as France and Italy, where the pound sterling has been at a premium, were, for some time prior to December, 1920, in excess of their commercial value, whereas imports from Japan, the United States of America and other countries where sterling was at a discount, were not given their full commercial value.

2. Value of Exports.—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term. Some modification of this practice, has, however, been necessary during recent years in respect of products affected by the policy of price-fixing arising from the war.

3. Customs Area.—The Customs Area, to which all Oversea Trade statistics issued by this Bureau apply, is the whole area of the Commonwealth of Australia, comprising the States of New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania and the Northern Territory (contiguous territory). Other (non-contiguous) territories and mandated areas are treated as outside countries. Trade transactions between the Commonwealth and these non-contiguous territories are included in the oversea trade of the Commonwealth. Such transactions, however, are also registered separately, *i.e.*, the trade of the Commonwealth with each particular country is separately recorded and tabulated.

4. Statistical Classification of Imports and Exports.—The Oversea Trade Bulletin No. 19 for the year 1921–22, from which the summary figures in this Year Book are extracted, was compiled according to a classification which provided for 23 classes covering 926 import items and 483 export items. This classification was revised during 1922 and the number of items regarding which particulars are recorded was greatly increased. Under the new classification in operation from 1st July, 1922, there are 21 classes, with 1,448 import items, and 504 export items.

5. The Trade Year.—From the 1st July, 1914, the statistics relating to Oversea Trade are shown according to the fiscal year (July to June). Prior to that date the figures showed the volume of trade during each calendar year.

6. Records of Past Years.—In the years preceding federation, each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports and exports were not on uniform lines. The figures in the following table for years prior to federation have been carefully compiled and may be taken as representative of the trade of Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Prior to 1905 the value of ships imported or exported was not included in the returns of trade.

7. Ships' Stores.—Prior to 1906 goods shipped in Australian ports on board oversea vessels as ships' stores were included in the general exports. From 1906, ships' stores have been specially recorded as such, and omitted from the return of exports. A table showing the value of these stores shipped each year since 1906 is given later on in this Chapter.

§ 4. Oversea Trade.

1. Total Oversea Trade.—(i) *General.* The following table shows the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. To economise space, the period 1826 to 1915–16 has been divided into quinquennia, and the figures shown represent the annual averages for the quinquennia specified. The figures for individual years have been published in previous issues of the Year Book.

OVERSEA TRADE.—AUSTRALIA, 1826 TO 1921-22.

Period.(a)	Recorded Value.			Value per Inhabitant.(b)			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	
1826-30 ..	638	153	791	10 12 5	2 10 11	13 3 4	23.9
1831-35 ..	1,144	613	1,757	11 19 10	6 8 6	18 8 4	53.6
1836-40 ..	2,283	1,112	3,395	14 15 9	7 4 1	21 19 10	48.7
1841-45 ..	1,906	1,378	3,284	9 0 5	6 10 5	15 10 10	72.3
1846-50 ..	2,379	2,264	4,643	6 18 10	6 12 2	13 11 0	95.2
1851-55 ..	11,931	11,414	23,345	19 12 5	18 15 4	38 7 9	95.7
1856-60 ..	18,816	16,019	34,835	18 6 1	15 11 8	33 17 9	85.1
1861-65 ..	20,132	18,699	38,831	15 17 1	14 14 9	30 11 10	93.0
1866-70 ..	18,691	19,417	38,108	12 7 4	12 16 11	25 4 3	103.9
1871-75 ..	21,982	24,247	46,229	12 7 2	13 13 6	26 0 8	110.3
1876-80 ..	24,622	23,772	48,394	11 19 7	11 10 9	23 10 4	96.6
1881-85 ..	34,895	28,055	62,950	14 4 3	11 9 5	25 13 8	80.4
1886-90 ..	34,675	26,579	61,254	11 16 11	9 1 0	20 17 11	76.6
1891-95 ..	27,335	33,683	61,018	8 5 2	10 2 5	18 7 7	123.2
1896-1900	33,763	41,094	74,857	9 5 4	11 5 6	20 10 10	121.7
1901-5 ..	39,258	51,237	90,495	10 1 10	13 2 9	23 4 7	130.5
1906-10 ..	51,508	69,336(c)	120,844	12 4 8	16 9 11	28 14 7	134.6
1911-15-16	73,411	74,504	147,915	15 7 4	15 12 10	31 0 2	101.5
1916-17 ..	76,229	97,955	174,184	15 12 7	20 1 10	35 14 5	128.5
1917-18 ..	62,335	81,429	143,764	12 12 7	16 10 0	29 2 7	130.6
1918-19 ..	102,335	113,964	216,299	20 6 10	22 13 1	42 19 11	111.4
1919-20 ..	98,974	149,824	248,798	18 17 3	28 11 1	47 8 4	151.4
1920-21 ..	163,802	132,159	295,961	30 12 9	24 14 5	55 7 2	80.7
1921-22 ..	103,066	127,847	230,913	18 14 1	23 4 1	41 18 2	124.0

(a) The figures given for the years 1826 to 1915-16 represent the annual averages for the quinquennial periods. The trade of the individual years will be found in the Official Year Book No. 15 and earlier issues. (b) Reckoned on mean population for the year. (c) Prior to 1906 ships' stores were included in the general exports. For value of these goods shipped each year since 1906 see later table.

The graphs of the movement of the oversea trade of Australia, which accompany this Chapter show that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and, measured by population, each succeeding depression since 1855 carried the trade per head lower than the preceding one, until the lowest point was reached in 1894. This was due to the acute financial stress which culminated in the commercial crisis of 1893.

There was a slight recovery in 1895, and a continuous upward movement until 1901. A decline, due to drought, in the exports of primary products, reduced the figures for 1902, but from this date until 1907 there was an increase. There was a falling-off in 1908 as compared with 1907, but from 1909 the value of imports and exports showed a steady increase until 1913, the year prior to the war.

The trade of 1914-15 and subsequent years was seriously disturbed by the dislocation of shipping and increased prices arising out of war conditions. The shortage of shipping was particularly marked in 1917-18, when, in order to conserve space for more essential requirements, the importation of goods which were considered to be in the nature of luxuries was prohibited or restricted.

(ii) *Effect of Prices.* The effect of prices on the value of exports is shown in the "Price Levels" given in §10 hereinafter. On the basis of uniform prices, the exports during the years 1914-15 to 1918-19 were less than for the years immediately preceding the war, and notwithstanding that they include accumulations of wool and wheat which could not be shipped earlier, the exports of 1919-20 were, on the basis of quantities, only 11 per cent. greater than the exports during 1913, though the recorded values were

91 per cent. higher. On a quantitative basis—*i.e.*, eliminating the effects of varying prices—the exports during 1921–22 were greater than in any previous year, though per head of population they were less than in 1911.

(iii) *Exchange Values.* The value of the exports during 1919–20 was sufficient to establish a very substantial balance in favour of Australia, though this balance was not actually so large as the official records would make it appear. This is due to the understatement of the value of imports as a result of the conversion of values on the par of exchange, whereas their commercial values, *i.e.*, the value of exports which would be required to effect a settlement of exchange would be determined by the current commercial rates. The net result of converting values on the par of exchange is that the value of imports during 1919–20 is understated by about 7 per cent. The figures for 1920–21 are similarly defective, though in a lesser degree, since from the 8th December, 1920, values have been converted on the basis of the current rates of exchange.

(iv) *Trade Conditions, 1920–21.* During the year 1920–21 the value of imports increased considerably. This increase was largely due to the fulfilment of long standing orders which it had been impossible to execute earlier. In their anxiety to replenish stocks which had become depleted during the war, and to take advantage of the free spending of soldiers' gratuities and repatriation moneys, Australian importers ordered freely in the belief that their orders could not be satisfied immediately, but hoping to get a percentage thereof. The trade depression in Great Britain, and the cancellation of foreign orders, however, enabled British manufacturers to devote their attention to Australian orders, with the result that shipments, which it had been expected would be spread over a long period were received in quick succession. The rapidity with which the goods arrived created some difficulty in providing exchange, and the banks found it necessary to restrict credit for import business. The value of imports during 1920–21 reached the exceptionally high figure of £163,801,826, an amount greatly in excess of any previous year.

The decline in the value of exports during 1920–21 as compared with 1919–20 was mainly due to reduced exports of wool at lower prices, and to smaller exports of meats, flour, hides and skins, tallow, copper, and lead. As a set-off against these items there was an increase in the exports of wheat of nearly £12,000,000, and of butter of nearly £8,000,000.

(v) *Trade in 1921–22.* Imports during 1921–22 amounted to £103,066,436 and the total exports were valued at £127,846,535, of which £123,487,513 was Australian produce. The trade position was, therefore, very much improved as compared with the previous year, by a reduction of 37 per cent. in the value of imports accompanied by a fall in the value of exports of only 3.2 per cent.

2. Ratio between Exports and Imports.—The foregoing table shows the percentage of exports on imports for each year*, and, with few exceptions, due to temporary dislocations of trade, it will be noted that prior to 1892 the balance of trade has been on the side of imports, while from 1892 to 1912 the position was reversed. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans or for investment in private undertakings, and the excess of exports represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and freight on trade carried mainly by ships of the United Kingdom and foreign countries. As the introduction of new capital and the payments for interest on existing investments and for shipping and other services are continually operating in opposite directions at the same time in the statistics of trade, it follows that it is the balance only of these transactions which is reflected in the excess of imports or exports.

The marked diminution in the excess of exports is a striking feature of the trade returns for 1912. The decline in the ratio was mainly due to loans raised in London by the State Governments. The proceeds of these loans naturally swell the import

* For individual years 1826 to 1900 see Official Year Book, No. 15, and previous issues.

returns, but, as no immediate payment beyond an instalment of interest has to be made in return, the export figures are affected in a minor degree only until such time as the principal of the debt is repaid. The larger number of immigrants at this period also affected, to some extent, the balance of trade by the introduction of capital. The following table presents the balance of trade of Australia for each year from 1902, and the modification of these figures as affected by loans raised abroad by the Commonwealth and State Governments. Owing to lack of complete information the figures must be taken as approximate.

EFFECT OF LOANS ON BALANCE OF AUSTRALIAN TRADE, 1902 TO 1921-22.

Year.	Excess of Exports as Recorded.		Net Amount of Debt Raised or Redeemed (—) Abroad.(b)	Excess of Exports Modified by Loans to Commonwealth and States' Governments.	
	Amount.	Per cent.	Amount.	Amount.	Per cent.
	£1,000.		£1,000.	£1,000.	
1902	3,239	100	5,014	8,253	100
1903	10,439	322	1,658	12,097	146
1904	20,465	632	753	21,218	257
1905	18,494	571	1,968	20,462	248
1906	24,993	771	— 5,308	19,685	238
1907	21,015	649	— 2,259	18,756	227
1908	14,512	448	6,088	20,600	249
1909	14,147	436	2,562	16,709	202
1910	14,477	447	— 2,904	11,573	140
1911	12,514	386	3,123	15,637	189
1912	937	29	12,205	13,142	159
1913	— 1,178	— 36	19,666	18,488	225
1914 (January to June) ..	— 1,847	<i>a</i>	<i>a</i>	— 1,847	<i>a</i>
1914-15	— 3,839	— 119	5,151	1,312	16
1915-16	— 2,966	— 91	2,827	— 139	— 2
1916-17	21,726	670	11,695	33,421	405
1917-18	19,095	590	17,373	36,468	442
1918-19	11,629	359	— 2,908	8,721	106
1919-20	50,849	1,570	5,212	c56,061	679
1920-21	— 31,643	— 977	5,574	— 26,069	— 316
1921-22	24,780	765	38,500	63,280	767

(a) Prior to June, 1914, the figures relating to debt were six months in advance of the trade figures ; since that date the periods to which the figures relate are identical. (b) See note (a) to the following table. (c) This amount should be reduced on account of conversion methods to about £49,000,000, and the corresponding percentage to about 590.

The trade balances would be further modified by the loans of local governing bodies, by the imports of capital for private enterprises, and by the addition to or absorption of bank balances held in London on Australian account. Particulars of such transactions are, however, not available. Moreover, since the outbreak of war the balances for single years have been completely upset by the difficulties of transport, and it is necessary, therefore, in a fair view of this period to take the total transactions during the seven years from the 1st July, 1914, to the 30th June, 1921.

The figures for the decade before the war show that an annual excess of exports of about £16,000,000 was required to meet local obligations on account of interest, and for shipping and other services rendered by persons outside Australia. Later loans raised in London by the States, and the loans and advances made by the Imperial Government to the Commonwealth Government increased this annual liability by about eight millions sterling in 1921-22, the average increase on account of each of the seven years ending June, 1921, being about £5,000,000 over the pre-war liability. This, added to the pre-war liability, represents an annual liability throughout the period

mentioned of about £21,000,000. Up to the end of the year 1919-20 all claims had been fully met, and there was at that time some accumulation of Australian funds in London. The excessive imports during 1920-21, after allowing for new loans, left an adverse balance on the trade of that year of £26,069,000, whereas the liabilities for the year required an excess of exports of over £22,000,000, consequently the value of exports for the year was about £48,000,000 short of the amount required to pay for the imports and to meet the standing obligations on account of interest, etc. The position with regard to exchange arising from this adverse balance of trade is indicated by the selling price of "On demand" drafts on London, which from December, 1920, was 37s. 6d. per £100. At no time since the establishment of the Commonwealth in 1901 had the price for similar drafts been so high. In 1916, as a result of drought, and the general dislocation due to the war, the price for some months was 25s. From 1905 to the outbreak of war the price never exceeded 15s. for more than a very brief period.

The action of the banks in restricting credit for importing purposes was so effective that the imports during 1921-22 were very substantially less than in the previous year, with the result that the trade of 1921-22 closed with a recorded excess of exports of £24,780,000. If to this recorded excess the sum of £38,500,000—representing an approximation of new external debt—be added, there will be an actual excess of exports amounting to approximately £63,280,000 which, combined with the shortage of the previous year gives an average excess for the two years of £18,105,000 per year, which would appear to be somewhat short of requirements. As already stated, however, the figures given in the accompanying tables relating to new debt are restricted to the transactions of the Governments of the Commonwealth and of the States, and so do not embrace all imports of capital. During the two years referred to, there was an increasing number of immigrants bringing in a certain amount of capital. That the Commonwealth has no unsatisfied foreign obligations at present is shown by the fact that after the 8th September, 1922, the selling price of "On demand" drafts on London was reduced to a premium of 2s. 6d. per £100.

The general relationship between the balance of trade of Australia and the borrowing of money abroad is demonstrated by the following figures:—

AUSTRALIAN BALANCE OF TRADE AND PUBLIC DEBT, 1867 TO 1922.

Period.	Annual Average.					
	Imports.	Exports.	Recorded Excess of		New Debt. (a)	Excess of Exports modified by Loans.
			Imports.	Exports.		
	Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.
1867-1871	17.8	20.0	..	2.2	1.7	3.9
1872-1876	23.4	24.6	..	1.2	2.6	3.8
1877-1881	25.6	24.6	1.0	..	5.2	4.2
1882-1886	35.8	26.8	9.0	..	10.6	1.6
1887-1891	35.4	29.4	6.0	..	7.4	1.4
1892-1896	25.6	33.0	..	7.4	3.8	11.2
1897-1901	36.2	44.4	..	8.2	3.2	11.4
1902-1906	39.6	55.2	..	15.6	0.8	16.4
1907-1911	56.0	71.2	..	15.2	1.3	16.5
1912-1915-16 (4½ years) ..	75.5	73.5	2.0	..	10.0	8.0
1916-17-1920-21 (5 years) ..	100.7	115.0	..	14.3	7.4	21.7(b)
1921-22	103.1	127.9	..	24.8	38.5	63.3

(a) Subsequent to 1897 these figures relate to moneys raised outside Australia only. Prior to 1893 the amounts raised locally were insignificant, but it is probable that the amount of new debt raised during 1892-6 is somewhat overstated. Loans raised by Local Government Bodies are not included. Loans for redemption purposes are not included, nor are loans from the Imperial Government for war purposes, the proceeds of which were spent abroad, and consequently did not affect Australian imports.

(b) Adjusted to eliminate defects of conversion of import values this figure would be 20.3.

§ 5. Direction of Trade.

1. Imports according to Country of Origin.—The following table shows the value of the imports stated to be the produce or manufacture of the countries named during the past five years:—

AUSTRALIAN IMPORTS—COUNTRIES OF ORIGIN, 1917-18 TO 1921-22.

Country of Origin.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
United Kingdom	22,074,921	34,584,611	38,516,436	76,849,934	53,001,926
British Possessions—					
Canada	1,667,068	2,844,050	2,640,280	4,425,262	3,146,450
Ceylon	1,302,118	1,379,337	1,675,443	838,340	1,009,477
India	4,798,624	7,967,228	4,777,905	7,312,832	3,747,023
New Zealand	1,616,803	2,136,146	1,930,049	1,995,897	1,702,991
Pacific Islands—					
Fiji	454,424	180,111	285,456	204,775	217,248
Territory of New Guinea	114,140	338,252	626,151	635,370	619,537
Other Islands	524,659	607,404	750,309	988,035	907,547
Papua	148,228	207,651	218,006	325,773	163,232
South African Union	976,050	5,918,705	964,195	534,118	356,869
Straits Settlements	475,269	339,162	354,179	284,886	571,544
Other British Possessions	311,970	502,637	1,011,737	891,150	565,213
Total British Possessions	12,389,353	22,420,683	15,233,710	18,436,488	13,007,131
Total British Countries	34,464,274	57,005,294	53,750,146	95,286,422	66,009,057
Foreign Countries—					
Belgium	21,397	4,691	276,940	1,929,647	950,952
China	772,498	791,378	1,094,427	1,034,306	950,772
France	1,219,270	1,651,833	2,422,304	3,597,811	2,731,739
Germany	18,055	10,956	13,474	56,944	85,976
Italy	470,828	581,631	581,038	828,217	944,226
Japan	5,511,383	8,203,725	4,222,511	5,230,039	3,581,614
Netherlands	162,424	259,599	196,712	613,926	498,824
Netherlands East Indies	1,519,416	3,036,018	8,313,874	8,798,957	3,236,970
Norway	395,665	654,220	831,909	1,920,997	848,134
Pacific Islands	151,224	287,197	262,377	152,938	119,127
Philippine Islands	277,653	113,997	204,958	209,170	151,106
Sweden	538,236	512,624	793,945	2,751,827	1,238,327
Switzerland	855,560	1,250,904	959,826	2,016,156	1,836,291
United States of America	15,456,002	27,183,792	23,826,313	36,113,477	18,823,113
Other Foreign Countries	500,564	787,300	1,223,538	3,260,992	1,060,208
Total Foreign Countries	27,870,175	45,329,865	45,224,146	68,515,404	37,057,379
Total	62,334,449	102,335,159	98,974,292	163,801,826	103,066,436

The value of imports into Australia fluctuated considerably during the five years under review. The lack of shipping occasioned by the war materially affected the importation of commodities during 1917-18, and the value of imports during that year was lower than that of 1913, the year prior to the war. In 1918-19 and subsequent years, however, the value of imports greatly increased; the figures reaching their maximum during the year 1920-21. The enhanced price of commodities during recent years is undoubtedly reflected in the figures, and when making any comparisons with imports during pre-war years this fact should be taken into consideration. The peculiar conditions affecting Australian trade during 1920-21 and which were responsible for the exceptionally high value of imports during that year, have already been mentioned in a previous paragraph.

In view of the effect that the varying prices of commodities had upon the value of imports during the period under review it is somewhat difficult to ascertain from the preceding table the relative importance of the various countries in the import trade of Australia. A better idea of the proportion of imports supplied by each country during each year may be obtained from the following table of percentages.

2. **Percentage of Imports from Various Countries.**—In the following table of percentages the relative proportions of the import trade of Australia which have been supplied by the various countries may be readily seen, together with the proportions furnished by the United Kingdom, British Possessions and foreign countries respectively.

**AUSTRALIAN IMPORTS.—PERCENTAGES FROM COUNTRIES OF ORIGIN,
1917-18 TO 1921-22.**

Country of Origin.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	35.41	33.80	38.91	46.92	51.43
British Possessions—					
Canada	2.67	2.78	2.67	2.70	3.05
Ceylon	2.09	1.35	1.69	0.51	0.98
India	7.70	7.79	4.83	4.46	3.64
New Zealand	2.59	2.09	1.95	1.22	1.65
Pacific Islands—					
Fiji	0.73	0.18	0.29	0.12	0.21
Territory of New Guinea	0.18	0.33	0.63	0.39	0.60
Other Islands	0.84	0.59	0.76	0.60	0.88
Papua	0.24	0.20	0.22	0.21	0.16
South African Union	1.57	5.78	0.97	0.33	0.35
Straits Settlements	0.76	0.33	0.36	0.17	0.55
Other British Possessions ..	0.51	0.49	1.02	0.54	0.55
Total British Possessions	19.88	21.91	15.39	11.25	12.62
Total British Countries ..	55.29	55.71	54.30	58.17	64.05
Foreign Countries—					
Belgium	0.03	0.00	0.28	1.18	0.92
China	1.24	0.77	1.11	0.63	0.92
France	1.96	1.61	2.45	2.20	2.65
Germany	0.03	0.01	0.01	0.04	0.08
Italy	0.76	0.57	0.59	0.51	0.91
Japan	8.84	8.02	4.27	3.19	3.48
Netherlands	0.26	0.25	0.20	0.37	0.48
Netherlands East Indies ..	2.44	2.97	8.40	5.37	3.14
Norway	0.63	0.64	0.84	1.17	0.82
Pacific Islands	0.24	0.28	0.26	0.09	0.12
Philippine Islands	0.45	0.11	0.21	0.13	0.15
Sweden	0.86	0.50	0.80	1.68	1.20
Switzerland	1.37	1.22	0.97	1.23	1.78
United States of America ..	24.80	26.57	24.07	22.05	18.27
Other Foreign Countries ..	0.80	0.77	1.24	1.99	1.03
Total Foreign Countries	44.71	44.29	45.70	41.83	35.95
Total	100	100	100	100	100

The percentage of imports from the United Kingdom declined during 1918-19, but in each of the succeeding years the proportion from that country steadily increased. The percentages of imports from United States and Japan show reduced figures in 1921-22 as compared with 1917-18 and 1918-19. United States provided 26.57 per cent. of the total imports during 1918-19 as against 18.27 per cent. in 1921-22, while the figures for Japan for these years were 8.02 per cent. and 3.48 per cent. respectively. The greater freedom of shipping facilities with these countries during the war years was

largely responsible for the increased trade. Other countries furnishing a fair volume of imports to Australia are India, Netherlands East Indies, Canada, France, Switzerland, and New Zealand.

3. Direction of Exports.—The following tables show a decreasing proportion of Australian exports to the United Kingdom. This was not entirely due to the relatively smaller purchases of Australian produce by the United Kingdom, but was in some measure the effect of an increasing tendency towards direct shipment of wool, skins, etc., to the consuming countries—notably to Belgium, France, and Germany—instead of distributing the trade through London. The figures given below do not, however, denote the total purchases by European countries of Australian produce, as large quantities were still distributed from London. The reservation to the United Kingdom of the first call on Australian primary products increased the proportion of exports to that country during the war period, and, to a greater extent, the proportion shipped to other parts of the Empire, notably to Egypt and to India. Large shipments of wool and wheat to Belgium and to France during 1920-21 and 1921-22 have caused the proportion of exports to move somewhat towards the pre-war distribution. The following table shows the value of exports from Australia to the more important countries during the five years 1917-18 to 1921-22:—

EXPORTS FROM AUSTRALIA TO VARIOUS COUNTRIES, 1917-18 TO 1921-22.

(INCLUDING BULLION AND SPECIE.)

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
United Kingdom	37,674,674	61,603,958	80,784,096	67,519,740	57,742,767
British Possessions—					
Canada	785,130	891,529	312,452	154,899	373,570
Ceylon	62,211	648,426	354,810	299,131	711,163
Egypt	3,960,414	8,409,107	2,769,331	6,607,172	3,523,355
Fiji	597,710	443,981	664,634	732,251	573,401
Hong Kong	391,525	1,551,679	2,599,757	866,839	536,596
India	8,696,719	7,741,081	2,439,935	2,193,006	6,770,067
Mauritius	3,376	40,108	102,944	117,554	145,352
New Zealand	4,010,085	4,156,860	7,743,744	7,780,763	4,619,655
Papua	209,139	205,193	308,159	292,851	172,419
South African Union	2,592,430	2,347,367	3,044,351	3,049,507	1,660,359
Straits Settlements	882,913	1,563,056	6,216,398	2,121,090	1,876,648
Other British Possessions	280,495	1,660,886	1,293,421	1,701,305	880,614
Total British Possessions	22,472,147	29,659,273	27,849,936	25,916,368	21,843,199
Total British Countries	60,146,821	91,263,231	108,634,032	93,436,108	79,585,966
Foreign Countries—					
Argentine Republic	76,246	2,218	5,582	7,484	8,426
Belgium .. ..	..	104,890	4,263,608	6,845,925	5,015,976
Chile and Peru	97,818	204,466	181,928	227,037	227,538
China	225,828	314,008	543,365	328,087	509,339
France	1,926,375	1,045,182	6,671,878	6,409,862	8,701,179
Germany .. ..	..	1,608	16,520	1,457,119	4,003,726
Italy	1,278,725	1,724,801	3,771,544	2,547,810	8,047,291
Japan	3,340,064	3,846,951	7,229,501	3,117,572	7,952,547
Netherlands .. ..	..	1,264	11,005	1,264,530	765,725
Netherlands East Indies	1,195,666	2,632,901	3,119,766	2,568,619	2,368,197
Norway .. ..	..	453,731	500,208	170,532	300,389
Pacific Islands	961,358	1,060,767	724,666	757,541	482,666
Philippine Islands	826,722	653,653	1,061,463	420,870	565,063
Spain	186	3,679	866	287,669	354,405
Sweden .. ..	..	731,282	256,702	136,500	25,180
United States of America	10,650,034	9,009,425	11,129,937	9,965,575	8,314,386
Other Foreign Countries	703,378	909,919	1,700,938	2,210,072	618,536
Total Foreign Countries	21,282,400	22,700,745	41,189,477	38,722,804	48,260,569
Total	81,429,221	113,963,976	149,823,509	132,158,912	127,846,535

4. **Percentage of Exports to Various Countries.**—The following table gives the relative proportions of the export trade of Australia with the countries specified, together with the proportions shipped to the United Kingdom, British Possessions and foreign countries respectively :—

**EXPORTS FROM AUSTRALIA.—PERCENTAGES TO VARIOUS COUNTRIES,
1917-18 TO 1921-22.**

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	46.27	54.06	53.92	51.10	45.16
British Possessions—					
Canada	0.96	0.78	0.21	0.12	0.29
Ceylon	0.08	0.57	0.24	0.22	0.56
Egypt	4.87	7.37	1.85	5.01	2.76
Fiji	0.73	0.39	0.44	0.53	0.45
Hong Kong	0.48	1.36	1.74	0.65	0.42
India	10.68	6.79	1.63	1.66	5.30
Mauritius	0.00	0.03	0.07	0.09	0.11
New Zealand	4.93	3.65	5.17	5.90	3.61
Papua	0.26	0.18	0.21	0.22	0.13
South African Union	3.18	2.06	2.02	2.31	1.30
Straits Settlements	1.08	1.37	4.15	1.61	1.47
Other British Possessions	0.34	1.47	0.86	1.29	0.69
Total British Possessions	27.59	26.02	18.59	19.61	17.09
Total British Countries ..	73.86	80.08	72.51	70.71	62.25
Foreign Countries—					
Argentine Republic	0.09	0.00	0.00	0.00	0.01
Belgium	0.00	0.09	2.85	5.18	3.92
Chile and Peru	0.12	0.18	0.12	0.17	0.18
China	0.28	0.28	0.36	0.25	0.40
France	2.37	0.92	4.45	4.86	6.81
Germany	0.00	0.00	0.01	1.10	3.13
Italy	1.57	1.51	2.52	1.93	6.29
Japan	4.10	3.38	4.83	2.36	6.22
Netherlands	0.00	0.00	0.01	0.96	0.60
Netherlands East Indies	1.47	2.31	2.08	1.94	1.85
Norway	0.00	0.40	0.33	0.12	0.24
Pacific Islands	1.18	0.93	0.48	0.57	0.38
Philippine Islands	1.02	0.57	0.71	0.32	0.44
Spain	0.00	0.00	0.00	0.21	0.28
Sweden	0.00	0.64	0.17	0.10	0.02
United States of America	13.08	7.91	7.43	7.55	6.50
Other Foreign Countries	0.86	0.80	1.14	1.67	0.48
Total Foreign Countries	26.14	19.92	27.49	29.29	37.75
Total	100	100	100	100	100

5. **Principal Imports and Exports—Countries.**—The total value of imports from, and exports to, each of the more important countries, together with brief particulars of the principal commodities interchanged with such countries are given hereunder. Should further details be required reference may be made to the annual publication "Oversea Trade Bulletin, No. 19," issued by this Bureau, which gives details of the trade of 38 of the principal countries of the world with Australia during the past five years. This publication also furnishes information regarding the country of origin of each statistical item of imports for the years 1920-21 and 1921-22, showing the value and (where available) the quantity imported from each country. The value of each item imported into each State of the Commonwealth is also shown. The publication referred to also gives information as to the country to which each item of exports was shipped during the year 1921-22.

United Kingdom. Total Imports of United Kingdom Origin, £53,001,926. The two outstanding classes of goods imported were—Apparel, textiles, etc., £21,537,704, and machines, machinery and manufactures of metal, £12,454,671. Imports of the undermentioned goods also contributed largely to the total:—Whisky; yarns, including hosiery yarn containing wool; iron and steel, bar, rod, etc.; china and earthenware; paper and stationery; drugs and chemicals, and electrical materials, including covered cable and wire.

Total Exports to United Kingdom, £57,742,767. Of this total £57,100,422 represented Australian produce. The principal items of export were—Wool, £23,013,128; wheat, £11,774,132; and butter, £6,921,654. Other commodities which bulked largely were—Frozen beef, mutton, and lamb; cheese; fruits, fresh, dried, and preserved; hides and skins; tallow; leather; copper; and lead.

United States of America. Total Imports of United States Origin, £18,823,113. The following were the more important items of import:—Tobacco, manufactured and unmanufactured; apparel, textiles, etc.; petroleum spirit, benzine; kerosene; lubricating and other oils; electrical machinery, materials and appliances; printing machinery; motor car chassis, etc.; manufactures of metals; undressed timber; films for kinematographs; sulphur; and preserved fish.

Total Exports to United States, £8,314,386. Of this total £7,978,616 represented Australian produce. The principal exports were—Wool; gold specie; rabbit, kangaroo and opossum skins; pearlshell; sausage casings; butter; and hides. The value of the above commodities represents 91 per cent. of the total exports to the United States.

India. Total Imports of Produce or Manufacture of India, £3,747,023. Bags and sacks valued at £2,128,977 represent 56 per cent. of the total imports. The other principal items were—Hessians; rice; tea; hides and skins; linseed; paraffin wax; gums and resins; and coffee and chicory.

Total Exports to India, £6,770,067. Of this total £6,734,239 represented Australian produce. The chief exports were—Wheat, £4,181,621; gold specie, £1,294,150; silver, £661,188; undressed timber; coal; tallow; preserved meats; and preserved milk and cream.

Japan. Total Imports of Japanese Origin, £3,581,614. Principal imports—Piece goods of silk or containing silk, £2,014,145; cotton piece goods, £408,851; china and porcelain ware; glass and glassware; undressed timber; and fancy goods.

Total Exports to Japan, £7,952,547. Of this total £7,883,904 was Australian produce. Chief exports—Wool, £4,438,762; wheat, £1,961,063; tallow; pig lead; zinc; flour; and infants and invalids' foods.

Netherlands East Indies. Total Imports of Netherlands East Indies Origin, £3,236,970. The principal imports were—Petroleum spirit, including benzine, etc., £1,531,397; tea, £935,619; kerosene; crude indiarubber; kapok; sago and tapioca; and spices.

Total Exports to Netherlands East Indies, £2,368,197. Of this total £2,341,618 was the produce of Australia. Chief exports were—Flour, £590,092; butter, £461,462; preserved milk and cream; coal; leather; bacon and ham; and biscuits.

Canada. Total Imports of Canadian Origin, £3,146,450. The principal imports were—Chassis for motor cars, £782,180; printing paper, £703,705; preserved fish; agricultural implements; undressed timber; corsets; and metal manufactures.

Total Exports to Canada, £373,570. Of this total £365,451 was Australian produce. Chief items were—Wool, greasy, scoured, and tops, £245,421; butter; meats; hides and skins; and onions.

France. Total Imports of French Origin, £2,731,739. Chief imports were—Piece goods of silk or containing silk, £597,657; trimmings for attire, £308,785; motor cars and parts; lace for attire; brandy; wine; indiarubber manufactures; cream of tartar; perfumery and toilet preparations; fancy goods; tobacco-pipes; and gloves.

Total Exports to France, £8,701,179. Of this total £8,580,625 was Australian produce. Principal exports were—Wool, £6,842,265; wheat, £904,821; sheep skins, £533,165; copra; concentrates; and tallow.

Switzerland. Total Imports of Swiss Origin, £1,836,291. Chief items were—Piece goods of silk, £637,853; trimmings and ornaments for attire, £545,607; lace for attire; clocks and watches; grass straw for manufacture of hats.

Total Exports to Switzerland, £32,410. (Timepieces and parts, £30,603.)

Pacific Islands (British and Foreign). Total Imports of Produce of the Pacific Islands, £1,863,459. Chief items were—Copra, £969,589; rock phosphates, £467,859; sugar, molasses, etc.; cocoa beans; cattle; and guano.

Total Exports to Pacific Islands, £1,894,450. Of this amount £1,181,789 was the produce of Australia. The exports to these islands cover a very wide range of commodities. The outstanding items, in order of value, were—Foodstuffs of vegetable origin, £482,882; apparel, textiles, etc., £239,194; machines, machinery and metal manufactures, £234,085; coal and coke, £136,744; foodstuffs of animal origin, £123,936; and tobacco, cigars, and cigarettes, £116,266. The chief individual items were—Butter; meats; biscuits; flour; rice; sugar; potatoes; tea; ale and porter; spirits; tobacco and cigarettes; boots; canvas and duck; cotton piece goods; kerosene; coal; undressed timber; and soap.

New Zealand. Total Imports of New Zealand Origin, £1,702,991. The principal items were—Undressed timber, £662,597; hides and skins, £363,671; flax and hemp; oakum and tow; linseed and other seeds; smoked fish; horses; and butter.

Total Exports to New Zealand, £4,619,655. Of this total £3,241,094 was Australian produce. The chief items were—Apparel, textiles and manufactured fibres, £676,759; machinery and metal manufactures, £491,282; coal, £445,728; manufactured tobacco, £377,774; undressed timber, £362,788; indiarubber manufactures; leather; dried and fresh fruits; confectionery; and medicines. The remaining exports covered a very large range of commodities and included a number of items which are not produced in Australia, such as rice, tea, paints, dyes, glassware, earthenware, etc.

Sweden. Total Imports of Swedish Origin, £1,238,327. Chief items were—Printing paper, £316,280; cream separators, £251,454; wrapping and other paper; dressed and undressed timber; matches; electrical fittings; and wood pulp.

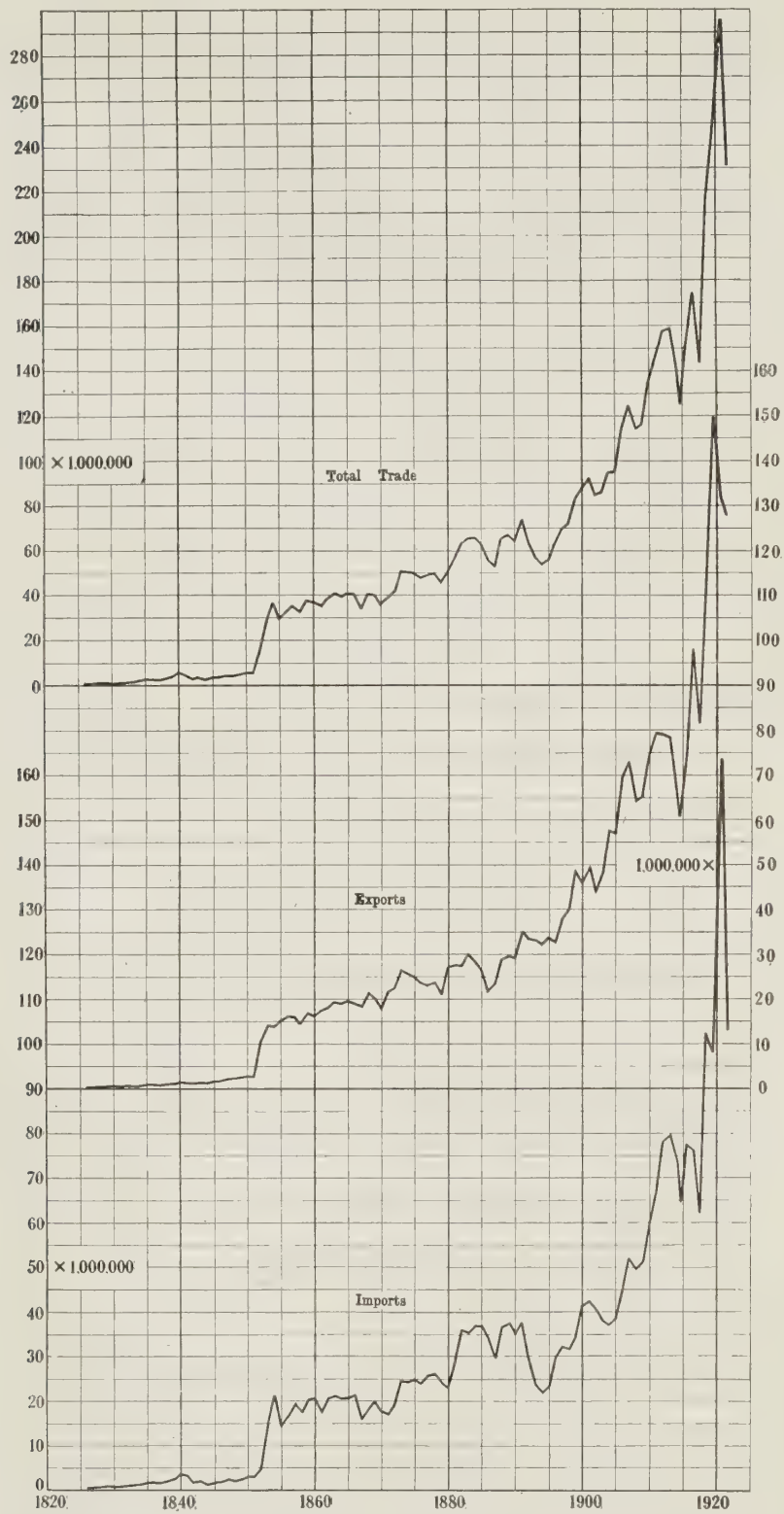
Total Exports to Sweden, £25,180. Chief items were—Wool, £16,406; hides, £6,984.

Ceylon. Total Imports of Cingalese Origin, £1,009,477. The chief items were—Tea, £826,184; nuts, £92,832; rubber; cocoa and chocolate; and fibres.

Total Exports to Ceylon, £711,163. Of this total £706,718 was Australian produce. The principal exports were—Gold specie, £352,950; flour; wheat; undressed timber; butter; bacon and ham; preserved milk; silver; and oils and fats.

Belgium. Total Imports of Belgian Origin, £950,952. Principal imports were—Iron and steel, bar, angle, hoop, etc., £221,901; glass and glassware, £213,581; cotton and linen piece goods; gloves; parchment; cameos and precious stones (unset); and iron, steel and other wire.

VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS, AUSTRALIA, 1826 TO 1921-22.



(See page 223.)

EXPLANATION.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for imports and exports, and ten million pounds sterling for total trade.

VALUES PER HEAD OF POPULATION OF TOTAL TRADE, EXPORTS, AND IMPORTS.
AUSTRALIA, 1826 TO 1921-22.



(See page 223.)

EXPLANATION.—The base of each square represents an interval of five years, and the vertical height £5 per head of the population.

Total Exports to Belgium, £5,015,976. Of this total £4,994,839 was the produce of Australia. Chief items were—Wool, £3,784,065; wheat, £351,013; zinc concentrates, £299,703; barley; hides and skins; and tallow.

China. Total Imports of Chinese Origin, £950,772. The principal items were—Silk piece goods, £175,156; cotton piece goods, £116,686; rice, £99,020; linseed; tea; edible nuts; preserved ginger; china and other oils; raw cotton; and grass straw.

Total Exports to China, £509,339. Of this total £501,432 was Australian produce. Principal items were—Silver, bar, ingots, etc., £137,503; butter, £88,358; flour, £63,388; wool; wheat; tallow; leather; jams and jellies; and undressed timber.

Italy. Total Imports of Italian Origin, £944,226. Chief imports were—Chassis for motor cars, £309,086; silk piece goods, £163,422; edible nuts; hides; hats; essential oils; flax and hemp; marble; gloves; and works of art.

Total Exports to Italy, £8,047,291. Of this total, £7,996,404 was Australian produce. Chief exports were—Wheat, £5,137,957; wool, £2,667,081; tallow; hides and skins; and copra.

Norway. Total Imports of Norwegian Origin, £848,134. Principal items were—Paper, £418,352; timber, £256,382; preserved fish, £131,105.

Total Exports to Norway, £300,389. Of this total the principal item was wheat, £279,822.

Straits Settlements. Total Imports of Straits Settlements Origin, £571,544. Principal items were—Petroleum spirit, etc., £253,181; rubber, £153,908; sago and tapioca; spices; resins; flax and hemp; and bamboo and cane.

Total Exports to Straits Settlements, £1,876,648. Of the total, £1,809,718 was the produce of Australia. Chief exports were—Preserved milk and cream, £726,624; flour, £301,390; mining machinery, £213,576; butter and substitutes; coal; sheep; horses; bacon and ham; and preserved and frozen meat.

Netherlands. Total Imports of Netherlands Origin, £498,824. Principal items were—Metal manufactures; piece goods; caramel, etc.; cocoa and chocolate; paper; gin and schnapps; and jewellery.

Total Exports to Netherlands, £765,725. Chief exports were—Wheat, £389,462; copra, £220,892; cameos and precious stones, £50,000.

South African Union. Total Imports of Produce of South African Union, £356,869. Principal items were—Precious stones, £166,610; explosives, £71,820; fancy goods; feathers; tanning bark; maize; fibres and seeds.

Total Exports to South African Union, £1,660,359. Of this total £1,644,989 was the produce of Australia. Chief exports were—Wheat, £443,067; flour, £329,241; undressed timber, £395,026; preserved milk and cream, £188,088; tallow; dried fruits; and leather.

Philippine Islands. Total Imports of Philippine Islands Origin, £151,106. Chief items were—Flax and hemp, £101,191; timber, £33,294; and tobacco and cigars.

Total Exports to Philippine Islands, £565,063. Principal items were—Frozen meats, £148,290; flour, £155,915; preserved milk and cream; coal; butter; bacon and ham; and cattle.

Spain. Total Imports of Spanish Origin, £90,727. Chief items were—Corks, etc., £26,018; edible nuts, £20,764; liquorice; raisins; and quicksilver.

Total Exports to Spain, £354,405. Wheat, £324,601; wool, £28,535.

Germany. Trade with Germany was suspended on the outbreak of war, and importation of German goods, except by permits granted by the Minister for Trade and Customs, was not permitted until the 1st August, 1922. Imports from Germany during 1921–22 were valued at £85,976, and exports thereto amounted to £4,003,726. Chief items of export were—Wool, £2,404,833; wheat, £879,184; copra, £458,005; concentrates; hides and skins; and sausage casings.

Egypt. *Total Imports of Egyptian Origin*, £21,962. Chief items were—Gums and resins, £12,581; seeds; cigarettes; oils; and prepared grain and pulse.

Total Exports to Egypt, £3,523,355. Principal items were—Flour, £2,111,333; wheat, £1,341,109; butter; frozen meat; and undressed timber.

Russia. *Total Imports of Russian Origin*, £18,011. Chief items were—Linseed; furs; pitch and tar; and drugs.

Total Exports to Russia, £210,748. Of this total wheat represented £210,690.

Hong Kong. *Total Imports of Hong Kong Origin*, £5,445. Chief items were—Cair mats and matting; ginger; silk piece goods; bamboo and wicker articles; and fireworks.

Total Exports to Hong Kong, £536,596. Chief items were—Flour, £124,498; fish, £84,289; sandalwood, £57,714; butter; preserved milk and cream; pig lead; leather and manufactures thereof; jams and jellies; bacon and ham; and frozen meat.

6. **Imports—States, and Total.**—Imports are recorded at the port of landing and are credited to the State in which the port is situated. Records are not obtainable of interstate trade and the State totals represent, therefore, the value of oversea goods consigned to the various States. They do not, moreover, represent the consumption within each State.

IMPORTS.—STATES, AND TOTAL, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	29,519,986	46,013,102	44,691,959	72,466,306	43,321,478
Victoria ..	21,113,588	35,026,311	33,788,287	57,608,777	36,352,056
Queensland ..	4,492,746	6,075,649	7,218,694	11,840,442	8,639,446
South Australia ..	4,181,322	6,502,319	7,473,893	12,381,973	9,047,242
Western Australia	2,505,271	8,083,852	4,959,062	7,219,538	4,308,141
Tasmania ..	489,249	608,786	813,341	2,264,933	1,385,958
Northern Territory	32,287	25,140	29,056	19,857	12,115
Total ..	62,334,449	102,335,159	98,974,292	163,801,826	103,066,436

7. **Exports—States and Total.**—The following table gives the value of exports shipped from each State during the past five years. It must be noted that the value of goods transferred from one State to another for shipment to oversea countries is shown as an export from the State from which the goods were finally despatched.

EXPORTS.—STATES AND TOTAL, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	39,619,093	51,027,359	55,017,065	52,601,798	48,012,511
Victoria ..	20,716,688	28,095,159	43,124,940	34,871,961	34,644,182
Queensland ..	10,960,811	12,447,616	14,403,922	15,171,884	17,573,103
South Australia ..	5,148,977	11,570,470	20,530,355	17,773,919	14,747,260
Western Australia	3,763,610	9,444,021	14,459,097	10,395,015	10,797,000
Tasmania ..	951,623	1,002,093	2,010,503	1,329,583	2,067,443
Northern Territory	268,419	377,258	277,627	14,752	5,036
Total ..	81,429,221	113,963,976	149,823,509	132,158,912	127,846,535

8. Trade of Principal Ports.—The following table gives the value of Imports received at, and Exports despatched from, the principal ports of Australia during 1920-21 and 1921-22.

OVERSEA TRADE.—PRINCIPAL PORTS, 1920-21 AND 1921-22.

Port.	1920-21.			1921-22.		
	Imports.	Exports.	Total.	Imports.	Exports.	Total.
	£	£	£	£	£	£
<i>New South Wales.</i>						
Sydney	70,423,894	49,558,831	119,982,725	41,753,947	46,041,670	87,795,617
Newcastle	2,042,412	2,928,603	4,971,015	1,567,531	1,915,624	3,483,155
Other Ports .. ..	..	114,364	114,364	..	55,217	55,217
Total	72,466,306	52,601,798	125,068,104	43,321,478	48,012,511	91,333,989
<i>Victoria.</i>						
Melbourne	57,366,043	31,008,032	88,374,075	36,057,242	29,935,460	65,992,702
Geelong	222,666	3,053,110	3,275,776	226,271	3,382,514	3,608,785
Other Ports	20,068	810,819	830,887	68,543	1,326,208	1,394,751
Total	57,608,777	34,871,961	92,480,738	36,352,056	34,644,182	70,996,238
<i>Queensland.</i>						
Brisbane	10,235,407	11,126,832	21,362,239	7,603,342	15,076,563	22,679,905
Townsville	627,228	1,941,292	2,568,520	431,133	1,231,361	1,662,494
Other Ports	977,807	2,103,760	3,081,567	604,971	1,265,179	1,870,150
Total	11,840,442	15,171,884	27,012,326	8,639,446	17,573,103	26,212,549
<i>South Australia.</i>						
Port Adelaide, including Adelaide	12,298,214	10,212,543	22,510,757	8,919,867	9,948,437	18,868,304
Port Pirie	35,057	2,529,835	2,564,892	66,590	1,977,542	2,044,132
Wallaroo	48,702	3,231,072	3,279,774	60,785	1,636,251	1,697,036
Other Ports .. ..	..	1,800,469	1,800,469	..	1,185,030	1,185,030
Total	12,381,973	17,773,919	30,155,892	9,047,242	14,747,260	23,794,502
<i>Western Australia.</i>						
Fremantle (Perth)	7,047,824	7,066,631	14,114,455	4,218,047	7,827,798	12,045,845
Bunbury	11,187	834,455	845,642	20,552	1,193,943	1,214,495
Other Ports	160,527	2,493,929	2,654,456	69,542	1,775,259	1,844,801
Total	7,219,538	10,395,015	17,614,553	4,308,141	10,797,000	15,105,141
<i>Tasmania.</i>						
Hobart	1,689,694	971,409	2,661,103	888,154	1,535,948	2,424,102
Launceston	575,239	358,174	933,413	484,018	387,279	871,297
Other Ports .. ..	..	..	..	13,786	144,216	158,002
Total	2,264,933	1,329,583	3,594,516	1,385,958	2,067,443	3,453,401
<i>Northern Territory.</i>						
Port Darwin	19,857	14,752	34,609	12,115	5,036	17,151
Grand Total	163,801,826	132,158,912	295,960,738	103,066,436	127,846,535	230,912,971

§ 6. Exports to Eastern Countries.

1. **Principal Articles Exported.**—The following table shows the value of exports from Australia to Eastern countries during the last five years. The principal countries concerned in this trade are China, India and Ceylon, Japan, Netherlands Indies and Timor (Portuguese), Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the tables apply to these countries only.

EXPORTS FROM AUSTRALIA TO EASTERN COUNTRIES.—PRINCIPAL COMMODITIES, 1917-18 TO 1921-22.

Article.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Antimony	1,834	1,313	1,099	160	683
Biscuits	248,822	208,495	165,584	127,573	86,187
Butter	420,551	659,743	1,066,694	700,283	760,581
Cheese	48,016	41,706	61,862	30,104	19,036
Coal	41,496	85,792	247,147	863,165	422,323
Concentrates—Zinc	236,465	158,557	37,310	..	..
Copper	595,877	280,598	729,041	212,466	4,239
Grain and Pulse—					
Wheat	258,660	1,997,299	2,389,191	13,881	6,243,878
Flour	1,286,990	1,811,476	4,057,560	628,274	1,413,859
Other (prepared and unprepared)	122,846	289,854	210,079	109,465	47,693
Hay, chaff, and compressed fodder	23,563	19,542	36,190	24,659	22,110
Horses	481,370	176,239	121,857	154,235	40,382
Iron and Steel (unmanufactured)	86,771	314,776	301,612	67,961	1,527
Jams and jellies	452,919	155,377	128,688	158,092	81,299
Lead, Pig	560,100	681,473	580,724	32,701	347,963
Leather	144,950	229,695	346,510	282,738	217,185
Meats	1,483,663	1,581,192	526,277	587,907	545,659
Milk and cream	422,316	697,311	901,343	944,021	1,305,277
Pearl shell and trochus shell	53,363	70,007	209,657	43,880	50,779
Sandalwood	99,943	138,468	266,945	194,591	75,556
Skins, hoofs, horns, bones, sinews, tallow	235,320	464,544	947,271	439,270	601,077
Sulphate of ammonia	194,921	325,793	204,759	126,639	83,346
Tin ore	28,385	..	..	2,735	..
Timber (undressed)	12,817	5,258	29,834	151,059	182,032
Wool	1,862,869	1,481,315	2,014,820	2,161,707	4,535,541
Other merchandise	1,161,720	2,235,562	1,755,816	1,672,567	1,588,522
Total merchandise	10,566,547	14,111,385	17,337,870	9,730,133	18,676,734
Specie and gold and silver bullion	5,064,507	4,854,609	6,232,767	2,192,714	2,615,173
Total exports	15,631,054	18,965,994	23,570,637	11,922,847	21,291,907

2. **Destination of Exports.**—The next table shows the destination of the articles exported to Eastern countries during the past five years.

EXPORTS FROM AUSTRALIA OF MERCHANDISE TO PRINCIPAL EASTERN COUNTRIES.—DESTINATION, 1917-18 TO 1921-22.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	225,828	313,908	406,850	328,087	371,836
East Indies	1,203,472	2,645,840	2,878,615	2,372,881	2,262,758
Hong Kong	391,525	685,256	1,406,924	668,713	536,596
India and Ceylon	3,696,023	4,452,771	1,571,885	1,229,252	5,158,346
Japan	3,340,064	3,846,901	7,229,424	2,853,406	7,952,547
Philippine Islands	826,722	653,653	1,061,360	420,870	565,063
Straits Settlements	882,913	1,513,056	2,782,812	1,856,924	1,829,588
Total	10,566,547	14,111,385	17,337,870	9,730,133	18,676,734

3. **Chief Exports to Eastern Countries.**—The series of tables given hereunder shows the value of each of the principal articles exported to the countries specified during each of the last five years.

BUTTER.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	77,743	56,271	89,217	91,173	88,358
East Indies	196,594	424,458	564,585	374,999	461,645
Hong Kong	33,298	28,618	66,197	62,127	42,116
India and Ceylon	7,526	10,168	38,485	35,922	19,237
Japan	691	1,170	55,126	12,204	36,721
Philippine Islands	26,504	48,658	91,040	45,002	35,753
Straits Settlements	78,195	90,400	162,044	78,856	76,751
Total	420,551	659,743	1,066,694	700,283	760,581

The exports of butter given above for the year 1921-22 were shipped from the several States as follows :—New South Wales, £213,423 ; Victoria, £488,689 ; Queensland, £55,765 ; Western Australia, £2,704.

COAL.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. ..	..	..	..	10,251	..
East Indies	8,133	31,533	73,303	422,213	219,919
Hong Kong .. ..	..	6,079	2	13,758	4,293
India and Ceylon	16,043	14,438	15,258	105,488	65,643
Japan .. ..	..	..	3,473	7,639	2,502
Philippine Islands	8,725	8,568	56,743	111,488	59,163
Straits Settlements	8,595	25,174	98,368	192,328	70,803
Total	41,496	85,792	247,147	863,165	422,323

The exports of coal are chiefly from New South Wales.

COPPER.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. ..	..	1,876	59,981	16,954	4,125
East Indies .. ..	..	..	1,848	2	..
India and Ceylon	595,877	270,695	276,840	195,510	..
Japan .. ..	..	8,027	390,372	..	..
Straits Settlements .. ..	..	..	..	..	114
Total	595,877	280,598	729,041	212,466	4,239

The copper exported to the East was mainly shipped from New South Wales.

GRAIN AND PULSE.—WHEAT.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. ..	..	..	..	..	34,150
East Indies .. ..	..	48	57,716	173	7
Hong Kong .. ..	..	..	6	..	..
India and Ceylon	54,500	1,573,608	402,662	10,306	4,248,575
Japan	204,141	422,028	1,924,723	3,376	1,961,063
Philippine Islands	19	71	..	26	..
Straits Settlements .. ..	..	1,544	4,084	..	83
Total	258,660	1,997,299	2,389,191	13,881	6,243,878

The exports of wheat given for the year 1921-22 were shipped from the following States :—New South Wales, £800,746 ; Victoria, £2,772,398 ; South Australia, £1,943,582 ; Western Australia, £727,152.

GRAIN AND PULSE.—FLOUR.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	14,812	13,873	20,183	1,440	63,388
East Indies	299,398	508,071	802,968	345,561	591,093
Hong Kong	49,567	226,971	591,734	9,364	124,498
India and Ceylon	11	256,337	174,562	11,768	94,315
Japan	47,109	18,743	464,922	8,603	83,260
Philippine Islands	518,650	412,642	683,698	65,270	155,915
Straits Settlements	357,443	374,839	1,319,493	186,268	301,390
Total	1,286,990	1,811,476	4,057,560	628,274	1,413,859

The flour exported during 1921-22 as above, was shipped from the several States as follows :—New South Wales, £563,388 ; Victoria, £560,429 ; South Australia, £67,576 ; Western Australia, £222,466.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	1,474	5,028	474	3,365	423
East Indies	3,680	41,378	67,689	65,209	5,211
Hong Kong	1,867	5,663	6,760	5,426	1,208
India and Ceylon	42,722	25,532	17,222	6,804	6,802
Japan	47,354	191,767	106,499	22,346	10
Philippine Islands	16,001	7,518	2,326	2,454	182
Straits Settlements	9,748	12,968	9,109	3,861	33,857
Total	122,846	289,854	210,079	109,465	47,693

The exports given above for 1921-22 were shipped from the following States :—New South Wales, £1,301 ; Victoria, £39,784 ; South Australia, £1,385 ; Western Australia, £4,990 ; Tasmania, £233.

HAY AND CHAFF, AND COMPRESSED FODDER.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. ..	..	..	..	65	44
East Indies	323	1,655	3,420	2,413	2,998
Hong Kong	680	1,596	1,191	1,783	1,103
India and Ceylon ..	12,711	4,874	13,881	10,547	4,514
Japan .. ..	..	135	67	540	..
Philippine Islands ..	8,771	8,168	12,601	5,983	8,901
Straits Settlements ..	1,078	3,114	5,030	3,328	4,550
Total	23,563	19,542	36,190	24,659	22,110

The exports given above for the year 1921-22 were shipped from the several States as follows:—New South Wales, £1,859; Victoria, £15,239; South Australia, £28; Western Australia, £4,984.

HORSES.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. ..	..	..	250	140	..
East Indies .. ..	..	18,336	14,464	15,375	6,163
Hong Kong .. ..	..	80	50	..	..
India and Ceylon ..	479,520	146,758	86,801	128,611	26,724
Japan	750	1,350	1,770	3,025	2,425
Philippine Islands ..	200	3,800	3,330	678	..
Straits Settlements ..	900	5,915	15,192	6,406	5,070
Total	481,370	176,239	121,857	154,235	40,382

The value of horses exported to the above countries from each State during 1921-22 was as follows:—New South Wales, £12,532; Victoria, £11,230; Queensland, £15,264; Western Australia, £1,356.

LEAD, PIG.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	27,568	30,672	30,698	..	223
East Indies	1,146	2,945	463	128	313
Hong Kong	76,968	77,426	120,427	347	39,695
India and Ceylon ..	..	7,145	..	..	..
Japan	454,118	563,035	428,796	32,200	307,732
Philippine Islands ..	300	..	340	..	..
Straits Settlements ..	..	250	..	26	..
Total	560,100	681,473	580,724	32,701	347,963

The exports of pig lead in 1921-22 were shipped from New South Wales, £347,664; Victoria, £223; Western Australia, £76.

MEATS.—PRESERVED BY COLD PROCESS.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. ..	..	..	..	..	5
East Indies	131	21	1,637	7,600	14,566
Hong Kong	6,501	7,465	21,213	31,599	20,961
India and Ceylon	14,270	7,696	25,066	34,747	16,883
Japan	4	..	1,019	1,303	4,023
Philippine Islands	36,587	56,617	88,481	73,691	148,310
Straits Settlements	65,206	62,374	104,633	130,963	89,542
Total	122,699	134,173	242,049	279,903	294,290

The exports to the above-mentioned Eastern countries during 1921-22 of meats preserved by cold process were shipped from the following States :—New South Wales, £102,017; Victoria, £492; Queensland, £191,781.

MEATS.—OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	9,317	14,124	14,972	16,115	5,193
East Indies	25,177	52,567	73,454	114,501	81,683
Hong Kong	13,325	14,608	28,753	23,082	13,303
India and Ceylon	1,251,929	1,289,847	48,450	50,987	80,220
Japan	338	2,335	3,312	2,460	1,619
Philippine Islands	17,575	23,644	33,589	48,877	23,822
Straits Settlements	43,303	49,894	81,698	51,982	45,529
Total	1,360,964	1,447,019	284,228	308,004	251,369

The exports given above for the year 1921-22 were shipped from the following States :—New South Wales, £54,921; Victoria, £34,309; Queensland, £161,334; South Australia, £426; Western Australia, £379.

SANDALWOOD.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China	9,857	18,767	18,307	39,798	7,611
East Indies .. ..	..	2,032	115	96	66
Hong Kong	76,093	92,518	174,659	111,730	57,714
India and Ceylon	1,275	1,588	1,860	7,736	6,180
Japan	482	1,500	482	40	50
Straits Settlements	12,236	22,063	71,522	35,191	3,935
Total	99,943	138,468	266,945	194,591	75,556

The exports of sandalwood in 1921-22 were shipped from Queensland, £20,482; Western Australia, £54,769; Northern Territory, £305.

SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. .. .	..	20	1,742	5,268	31,161
East Indies	6	..	..	821	4,230
Hong Kong	1,183	1,247	4,633	11,728	10,289
India and Ceylon ..	78	11,719	167,579	75,167	65,883
Japan	233,941	447,454	772,881	345,460	488,554
Philippine Islands ..	..	18	290	117	..
Straits Settlements ..	112	4,086	146	709	960
Total	235,320	464,544	947,271	439,270	601,077

The above exports of skins, etc., in 1921-22 were shipped from the several States as follows:—New South Wales, £363,498; Victoria, £103,170; Queensland, £113,762; South Australia, £20,477; Western Australia, £160; Northern Territory, £10.

TIMBER, UNDRESSED.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. .. .	..	..	5,996	39,682	19,796
East Indies	83	..	..	3,674	37
Hong Kong	8	2,197	2,969	4,954	6,580
India and Ceylon ..	..	650	13,948	91,966	153,117
Japan	11,827	2,276	6,921	8,380	2,478
Philippine Islands ..	..	..	..	2,403	..
Straits Settlements ..	899	135	..	..	24
Total	12,817	5,258	29,834	151,059	182,032

The above exports of undressed timber during 1921-22 from the several States were shipped as follows:—New South Wales, £8,776; Queensland, £564; Western Australia, £153,786; Tasmania, £18,906.

WOOL.

Country.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
China .. .. .	..	..	..	..	46,626
India and Ceylon ..	66,780	78,336	..	45,198	50,243
Japan	1,796,089	1,400,192	2,010,732	2,107,473	4,438,672
Philippine Islands ..	..	2,787	4,088	9,036	..
Total	1,862,869	1,481,315	2,014,820	2,161,707	4,535,541

The value of wool exported to the East by each State during 1921-22 was as follows:—New South Wales, £2,451,870; Victoria, £683,296; Queensland, £1,392,443; South Australia, £5,240; Western Australia, £2,692.

§ 7. Classified Summary of Australian Trade.

1. Imports.—The following table gives the imports into Australia during the last five years arranged in classes according to the nature of the goods :—

AUSTRALIAN IMPORTS.—IN CLASSES, 1917-18 TO 1921-22.

Classes.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
I. Animal foodstuffs, etc. ..	1,080,249	585,562	1,459,212	1,224,099	1,535,308
II. Vegetable foodstuffs, etc. ..	1,902,395	2,464,925	7,182,849	8,735,897	2,032,062
III. Beverages (non-alcoholic), etc. ..	1,843,990	2,454,323	4,623,883	1,997,213	2,423,271
IV. Alcoholic liquors, etc. ..	1,348,574	1,263,324	1,308,686	2,000,248	1,583,382
V. Tobacco, etc. ..	646,746	1,864,594	2,743,535	3,841,548	2,467,033
VI. Live animals ..	88,316	39,785	117,519	76,382	96,934
VII. Animal substances, etc. ..	496,760	1,710,058	1,720,135	2,324,742	1,783,228
VIII. Vegetable substances, etc. ..	3,175,545	3,200,509	3,642,092	4,251,172	3,338,679
IX. Apparel, etc. ..	21,752,258	36,237,171	26,702,771	49,877,538	32,511,316
X. Oils, etc. ..	2,995,967	4,099,649	4,751,906	8,428,750	5,130,286
XI. Paints, etc. ..	423,397	553,630	459,136	627,333	426,039
XII. Stones, etc. ..	131,648	181,326	187,706	209,147	170,160
XIII. Ores and metals, unmanufactured ..	628,555	772,880	924,366	1,509,914	1,252,466
XIV. Machinery and metals, manufactured ..	9,698,970	16,995,544	21,573,114	39,148,721	22,524,855
XV. Rubber, Leather, etc. ..	1,643,647	2,373,188	2,192,520	3,277,489	1,659,544
XVI. Wood, etc. ..	1,697,836	2,185,786	2,933,500	5,948,837	2,989,968
XVII. Earthenware, etc. ..	780,219	1,467,886	1,239,685	3,185,152	1,887,905
XVIII. Paper, etc. ..	3,003,538	5,543,880	4,156,626	8,978,897	4,855,564
XIX. Jewellery, etc. ..	1,065,432	1,600,868	2,029,268	2,538,269	1,698,412
XX. Instruments, etc. ..	701,420	745,718	991,041	1,125,158	943,688
XXI. Drugs, etc. ..	3,358,003	4,425,073	3,648,755	5,587,575	3,553,377
XXII. Miscellaneous ..	2,212,218	4,101,780	4,325,838	8,881,935	8,128,673
XXIII. Gold and silver; and bronze specie ..	1,658,766	7,467,700	60,149	25,810	74,286
Grand Total	62,334,449	102,335,159	98,974,292	163,801,826	103,066,436

2. Exports.—The exports are shown according to the same classification, distinguishing between exports of Australian produce and re-exports.

EXPORTS FROM AUSTRALIA.—IN CLASSES, 1917-18 TO 1921-22.

Classes.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
I. Animal foodstuffs, etc. ..	14,827,125	13,969,397	18,148,656	20,980,389	16,355,946
II. Vegetable foodstuffs, etc. ..	13,481,989	21,277,964	35,949,908	43,553,525	38,680,684
III. Beverages (non-alcoholic), etc. ..	44,343	58,435	71,736	58,651	41,325
IV. Alcoholic liquors, etc. ..	205,415	363,839	438,837	611,300	237,437
V. Tobacco, etc. ..	175,021	197,651	276,735	369,157	451,940
VI. Live animals ..	535,760	238,650	245,528	386,296	177,569
VII. Animal substances, etc. ..	27,854,379	47,656,915	62,102,428	37,743,146	51,552,608
VIII. Vegetable substances, etc. ..	234,964	310,701	499,651	356,886	234,964
IX. Apparel, etc. ..	482,062	1,047,515	1,435,711	1,165,237	317,840
X. Oils, etc. ..	1,218,164	2,679,540	3,629,903	1,731,162	1,596,965
XI. Paints, etc. ..	62,977	122,191	230,555	179,834	83,983
XII. Stones, etc. ..	322,332	441,278	898,565	2,364,101	1,155,075
XIII. Ores and metals, unmanufactured ..	8,238,395	7,478,178	7,634,907	4,665,082	3,824,067
XIV. Machinery and metals, manufactured ..	541,734	1,184,125	885,878	1,303,103	865,172
XV. Rubber, Leather, etc. ..	925,333	2,336,884	2,646,348	1,605,043	891,898
XVI. Wood, etc. ..	266,162	259,870	559,026	1,471,550	1,242,562
XVII. Earthenware, etc. ..	49,180	71,545	121,018	224,615	130,749
XVIII. Paper, etc. ..	76,412	97,093	147,178	194,732	148,604
XIX. Jewellery, etc. ..	78,712	193,931	350,694	259,395	84,321
XX. Instruments, etc. ..	39,115	43,138	62,658	67,564	61,076
XXI. Drugs, etc. ..	863,824	1,055,084	966,262	914,950	501,326
XXII. Miscellaneous ..	513,549	778,116	693,752	760,025	514,832
XXIII. Gold and silver; and bronze specie ..	7,411,968	4,164,761	6,573,390	5,464,938	4,336,569
Grand Total	78,448,915	106,026,801	144,569,324	126,430,681	123,487,512

EXPORTS FROM AUSTRALIA.—IN CLASSES, 1917-18 TO 1921-22—*continued.*

Classes.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
OTHER PRODUCE.—RE-EXPORTS.					
I. Animal foodstuffs, etc. ..	£ 73,095	£ 127,446	£ 70,793	£ 71,200	£ 39,822
II. Vegetable foodstuffs, etc. ..	294,688	224,358	270,713	393,973	277,126
III. Beverages (non-alcoholic), etc. ..	187,026	166,101	406,001	80,310	150,817
IV. Alcoholic liquors, etc. ..	71,800	73,264	176,524	155,548	102,889
V. Tobacco, etc. ..	105,815	89,886	136,348	117,506	61,365
VI. Live animals ..	8,199	14	24,298	3,793	9,092
VII. Animal substances, etc. ..	70,632	7,340	126,501	24,466	41,868
VIII. Vegetable substances, etc. ..	252,069	520,835	606,904	1,081,602	1,078,688
IX. Apparel, etc. ..	686,283	510,476	948,902	803,047	964,263
X. Oils, etc. ..	119,650	103,770	178,321	272,633	243,834
XI. Paints, etc. ..	11,095	8,903	11,760	8,102	5,341
XII. Stones, etc. ..	2,472	737	3,852	4,912	1,973
XIII. Ores and metals, unmanufactured ..	32,426	18,999	41,904	32,084	12,453
XIV. Machinery and metals, manufactured ..	306,184	268,116	505,283	622,630	454,443
XV. Rubber, Leather, etc. ..	66,862	84,461	155,036	107,904	226,839
XVI. Wood, etc. ..	14,850	28,125	52,082	106,821	76,766
XVII. Earthenware, etc. ..	13,398	15,493	35,693	30,354	14,129
XVIII. Paper, etc. ..	72,037	77,193	96,939	114,537	99,575
XIX. Jewellery, etc. ..	33,520	46,762	85,888	173,277	132,914
XX. Instruments, etc. ..	83,266	65,750	100,147	126,795	85,883
XXI. Drugs, etc. ..	132,254	161,327	150,662	129,406	101,291
XXII. Miscellaneous ..	168,782	312,377	993,509	1,252,056	176,102
XXIII. Gold and silver; and bronze specie ..	173,903	5,025,442	76,125	15,275	1,550
Grand Total ..	2,980,306	7,937,175	5,254,185	5,728,231	4,359,023

TOTAL EXPORTS.—AUSTRALIAN PRODUCE AND RE-EXPORTS.

I. Animal foodstuffs, etc. ..	£ 14,900,220	£ 14,096,843	£ 18,219,449	£ 21,051,589	£ 16,395,768
II. Vegetable foodstuffs, etc. ..	13,776,677	21,502,322	36,220,621	43,947,498	38,957,810
III. Beverages (non-alcoholic), etc. ..	231,369	224,536	477,737	138,961	192,142
IV. Alcoholic liquors, etc. ..	277,215	437,103	615,361	766,848	340,326
V. Tobacco, etc. ..	280,836	287,537	413,083	486,663	513,305
VI. Live animals ..	543,959	238,664	269,826	390,089	186,661
VII. Animal substances, etc. ..	27,925,011	47,664,255	62,228,929	37,767,612	51,594,476
VIII. Vegetable substances, etc. ..	487,033	831,536	1,106,555	1,438,488	1,313,652
IX. Apparel, etc. ..	1,168,345	1,557,991	2,384,613	1,968,284	1,282,103
X. Oils, etc. ..	1,337,814	2,783,310	3,808,224	2,002,795	1,840,799
XI. Paints, etc. ..	74,072	131,094	242,315	187,936	89,324
XII. Stones, etc. ..	324,804	442,015	902,417	2,369,013	1,157,048
XIII. Ores and metals unmanufactured ..	8,270,821	7,497,177	7,676,811	4,697,166	3,836,520
XIV. Machinery and metals, manufactured ..	847,918	1,452,241	1,391,161	1,925,733	1,319,615
XV. Rubber, Leather, etc. ..	992,195	2,421,345	2,801,384	1,712,947	1,118,737
XVI. Wood, etc. ..	281,012	287,995	611,108	1,578,371	1,319,328
XVII. Earthenware, etc. ..	62,578	87,038	156,711	254,969	144,878
XVIII. Paper, etc. ..	148,449	174,286	244,117	309,269	248,179
XIX. Jewellery, etc. ..	112,232	240,693	436,582	422,672	217,235
XX. Instruments, etc. ..	122,381	108,888	162,805	194,359	146,959
XXI. Drugs, etc. ..	996,078	1,216,411	1,116,924	1,044,356	602,617
XXII. Miscellaneous ..	682,331	1,090,493	1,687,261	2,012,081	690,934
XXIII. Gold and silver; and bronze specie ..	7,585,871	9,190,203	6,649,515	5,480,213	4,338,119
Grand Total ..	81,429,221	113,963,976	149,823,509	132,158,912	127,846,535

3. *Ships' Stores.*—Prior to 1906 goods shipped in Australian ports on board oversea vessels as ships' stores were included in the general exports. From 1906, ships' stores have been specially recorded as such, and have been omitted from the export figures.

The value of these stores shipped each year, during the period 1906 to 1921-22, showing bunker coal separately, is given in the following table:—

**VALUE OF STORES SHIPPED IN AUSTRALIAN PORTS ON OVERSEA VESSELS,
1906 TO 1921-22.**

Period.	Bunker Coal.	All Stores (including Coal).	Period.	Bunker Coal.	All Stores (including Coal).
	£	£		£	£
1906	575,471	875,966	1914 (1st six mths.)	533,288	771,581
1907	663,724	998,897	1914-15 ..	829,875	1,587,757
1908	867,707	1,196,106	1915-16 ..	719,510	1,544,872
1909	781,113	1,071,677	1916-17 ..	748,852	1,676,116
1910	740,567	1,080,133	1917-18 ..	632,910	1,389,291
1911	858,783	1,238,446	1918-19 ..	857,507	1,765,367
1912	1,008,259	1,431,985	1919-20 ..	1,487,872	2,688,371
1913	1,018,595	1,458,702	1920-21 ..	2,027,133	3,560,648
			1921-22 ..	2,178,101	3,152,604

§ 8. Exports according to Industries.

1. **Classification.**—The following table presents an analysis of the exports of Australian produce, according to the main classes of industry in which the goods were produced. In some cases in which the produce has been subjected to some initial process of manufacture, opinions may differ in regard to its classification. In preparing the following table the method adopted generally has been to credit to the primary industry those products in which the value of the primary element is appreciably the greater. Thus, such commodities as flour, jams and preserved fruits, chaff and prepared fodders, etc., have been treated as the produce of agriculture; butter, cheese, preserved milk, and bacon and hams have been credited to the dairying industry; canned meats, tallow and fellmongered skins have been credited to the pastoral industry, but leather has been classed as a product of manufacturing; minerals and metals which have been smelted or otherwise refined, but not further manufactured, have been included as the produce of mining; and sawn timber as the produce of forestry.

EXPORTS OF AUSTRALIAN PRODUCE ACCORDING TO INDUSTRIAL ORIGIN.

Industrial Origin.	1913.(a)		1920-21.		1921-22.	
	£		£		£	
Agriculture	10,677,734	100	43,336,754	406	38,452,643	360
Pastoral	42,057,346	100	45,815,314	109	58,220,175	138
Dairy and Farmyard ..	3,854,734	100	14,359,224	373	10,992,021	285
Mines and Quarries ..	14,712,242	100	12,417,565	84	9,345,342	64
Fisheries	424,849	100	445,280	105	434,552	102
Forestry	1,106,549	100	1,608,592	145	1,270,691	115
Total Primary Produce ..	72,833,454	100	117,982,729	162	118,715,424	163
Manufacturing	2,304,693	100	8,447,952	367	4,772,088	207
Total	75,138,147	100	126,430,681	168	123,487,512	164

(a) Base year.

2. **Effect of Price Changes.**—If the effect of price changes be eliminated from the above figures by the application of the export price index numbers, the relative quantitative results will be approximately as follows:—

AUSTRALIAN EXPORTS.—ELIMINATION OF PRICE CHANGES.

Industrial Origin.	1913.(a)		1920-21.		1921-22.	
	£		£		£	
Agriculture	10,677,734	100	18,060,391	169	24,151,470	226
Pastoral	42,057,346	100	29,200,969	69	45,233,380	108
Dairy and Farmyard	3,854,734	100	5,655,139	147	8,198,428	213
Mines and Quarries	14,712,242	100	7,629,987	52	7,295,523	50
Fisheries	424,849	100	392,663	92	450,313	106
Forestry	1,106,549	100	937,955	85	739,204	67
Total Primary Produce	72,833,454	100	61,877,104	85	86,068,318	118
Manufacturing	2,304,693	100	3,467,961	150	2,302,020	91
Total	75,138,147	100	65,345,065	87	88,370,338	118

(a) Base year.

Increasing manufacturing activity in close proximity to the centres of primary production—in some instances by co-operative association of primary producers—has the effect of merging closer the direct interests of primary and secondary production. Prominent cases of the kind referred to are the production of butter, preserved and dried milk, bacon and hams, canned and dehydrated fruit, jam, sugar, flax fibre. As, therefore, no sharp distinction can be made in such cases between the primary and secondary industries, it follows that the values allocated to these divisions in the above table must be taken as a general indication only of their relative importance in the export returns. While there is in the primary products some value due to factory processes, there is, on the other hand, in the manufactured products a considerable element of Australian primary produce in the raw materials from which these manufactured products were made. As the figures given are, however, on the same basis throughout the period covered by the table, they indicate, with reasonable accuracy, the variations in the relative importance of the several industrial groups.

3. **Relative Importance of Industrial Groups.**—In the first of the two preceding tables the value of commodities in each industrial group of exports is that recorded at date of shipment from Australia, while in the second the effect of price changes during the period has been taken into account.

In the table showing exports according to recorded value the pastoral group was responsible for the highest proportion of exports during each year. In 1913 the value of items included in this group represented 56 per cent. of the total exports, as compared with 47 per cent. during the year 1921-22. Wool constitutes the greater part of the exports in the pastoral group.

The value of minerals, etc., included in the mining group exceeded the value of items in the agricultural group during the year 1913, but, during the two later years the value of agricultural produce exported was greatly in excess of mineral exports, the value of which declined during 1920-22. According to value, the agricultural group now ranks next to the pastoral group. Wheat and flour are the two items of export mainly responsible for this position. The value of dairy and farm produce exported increased considerably during the period under review. Exports included in the fisheries and forestry groups have not varied to a marked extent, but a noticeable increase

occurred in the value of exports classified in the manufacturing group. Compared with 1913 the exports of manufactured goods increased 267 per cent. in 1920-21, but the value of exports in this group declined during 1921-22.

The recorded value of exports for all industrial groups shows an increase of 68 per cent. during 1920-21, and of 64 per cent. during 1921-22 as compared with the total value of exports during the year 1913.

The effect of eliminating price changes during the period may be seen in the second table. The high prices which prevailed during the years 1920 and 1921 tended to inflate the value of exports in 1920-21, but on a quantitative basis, the total exports during that year were 13 per cent. less than the exports in 1913. Prices receded during 1921-22, and this movement, together with the large increase in the exports of pastoral products, caused the figures for this year for all exports, on a quantitative basis, to show an increase of 18 per cent. over those for 1913, and of 35 per cent. over the total for the year 1920-21. The effect of eliminating price changes from the recorded value of exports is particularly noticeable in the figures for the agricultural, pastoral, dairy produce, and manufacturing groups.

§ 9. Movement of Specie and Bullion.

1. Imports and Exports.—The following tables show the value of gold and silver bullion, and specie, including bronze specie, imported and exported during the years 1917-18 to 1921-22:—

AUSTRALIAN IMPORTS AND EXPORTS, SPECIE AND BULLION, 1917-18 TO 1921-22.

Items.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
IMPORTS.					
	£	£	£	£	£
Gold—Specie	250,000	152	19	13	7
Bullion	1,231,810	6,969,849	36,312	6,736	6,356
Total	1,481,810	6,970,001	36,331	6,749	6,363
Silver—Specie	51,732	24,760	8,152	10,882	34,877
Bullion	94,712	75,678	1,596	2,502	2,041
Total	146,444	100,438	9,748	13,384	36,918
Bronze—Specie	24,271	600	7	11	23
GRAND TOTAL	1,652,525	7,071,039	46,086	20,144	43,304

**AUSTRALIAN IMPORTS AND EXPORTS—SPECIE AND BULLION,
1917-18 TO 1921-22—continued.**

Items.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
EXPORTS.					
	£	£	£	£	£
Gold—Specie ..	6,360,526	7,166,029	5,321,053	5,303,423	3,480,420
Bullion ..	6	2,132	226,154	796	200
Total ..	6,360,532	7,168,161	5,547,207	5,304,219	3,480,620
Silver—Specie ..	122,668	83,991	105,657	66,687	6,955
Bullion ..	906,651	1,938,001	979,307	77,319	841,085
Total ..	1,029,319	2,021,992	1,084,964	144,006	848,040
Bronze—Specie ..	65	50	2,045	515	40
Total— Australian Produce ..	7,216,013	4,164,761	6,558,091	5,433,465	4,327,150
Other Produce ..	173,903	5,025,442	76,125	15,275	1,550
GRAND TOTAL ..	7,389,916	9,190,203	6,634,216(a)	5,448,740(a)	4,328,700(a)

(a) Includes premium on gold exported.

2. Imports and Exports by Countries.—The next table shows the imports and exports of specie and bullion from and to various countries during the year 1921-22.

**AUSTRALIAN IMPORTS AND EXPORTS—SPECIE AND BULLION BY COUNTRIES,
1921-22.**

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
Australia ..	16,479	..	16,479	..	..	..
United Kingdom ..	11,888	2,159	14,047	2,021	27,841	29,862
Ceylon ..	..	..	..	352,950	14,596	367,546
India ..	..	..	..	1,294,150	661,188	1,955,338
New Zealand ..	..	44	44	2,800	92	2,892
Pacific Islands—						
Fiji ..	..	..	..	500	65	565
Nauru ..	..	..	..	2,060	..	2,060
Solomon Islands ..	..	..	..	200	..	200
Territory of New Guinea ..	..	215	215	711	..	711
Papua ..	..	5,230	5,230	..	..	..
Straits Settlements	..	..	..	47,060	..	47,060
Total British Countries ..	28,367	7,648	36,015	1,702,452	703,782	2,406,234

AUSTRALIAN IMPORTS AND EXPORTS—SPECIE AND BULLION BY
COUNTRIES, 1921-22—*continued*.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
China	£	£	£	£	£	£
France .. ..	..	..	..	..	137,503	137,503
Germany	11	..	11	..	..	..
Netherlands East Indies	6,529	..	6,529	..	..	..
Pacific Islands—	..	..	..	107,726	..	107,726
New Hebrides ..	..	..	..	724	..	724
United States of America	..	749	749	1,676,513	..	1,676,513
Total Foreign Countries	6,540	749	7,289	1,784,963	137,503	1,922,466
GRAND TOTAL ..	34,907	8,397	43,304	3,487,415	841,285	(a)4,328,700

(a) Includes the premium on gold exported.

§ 10. Effect of Prices on Value of Exports.

1. **General.**—In comparing the value of exports from, and also imports into, any country for a series of years, the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed in value—the only possible method when the commodities differ—the two sources of variation are confused.

2. **Methods of Computation.**—The scheme of comparison adopted has been to take an annual average for an extended period of the quantities of all such articles of export as are recorded by quantity, and to apply to the average quantities so obtained the average prices in each year. The quantities used to produce the following results are the averages for 19½ years, viz., from 1st January, 1897, to 30th June, 1916, which it is considered may be taken as representing the general quantitative composition or norm of the exports from Australia. The results published in issues of this work prior to No. 12, 1919, were ascertained by applying to the quantities exported during each year the average price per unit ruling in some year arbitrarily taken as the basic year. The advantage of the method now adopted is that the results are comparable throughout, whereas under the method previously followed each year was comparable with the basic year only.

3. **Effect on Export Values.**—The following table shows the value of exports as actually recorded in each year specified, together with the value computed on the assumption that the prices of 1901 were maintained. The table also shows the yearly “price-levels” based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports in each year since 1901. Column IV.—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1921-22, for example, would have been £72,259,686 only, instead of £124,358,920—the value actually recorded. The difference between these amounts (£52,099,234) results from a rise of 72 per cent. (i.e., from 1,000 to 1,721) in the prices of commodities for the period intervening between 1901 and 1921-22. A further increment in values has arisen from the premium on exported gold. During 1921-22 the premium on gold represented £522,137, or 17.6 per cent. on the standard price. Thus, on the basis of 1901 prices the total value of the exports during 1921-22 would have been £75,225,164 instead of £127,846,535 as recorded.

It will be seen from the column "Price-levels" that prices as indicated by the exports rose from the beginning of the decade to the year 1906. Owing to the large proportion of the aggregate value of exports represented by wool and wheat, any change in the price of these commodities has a marked effect on the index-numbers for the total group of exports, and it is to their influence that the fall of prices in 1911 is mainly due. Since that year prices have steadily increased, reaching their maximum during 1920-21, but there was a considerable decline during 1921-22.

AUSTRALIAN EXPORTS.—VALUES AND PRICE LEVELS, 1901, 1906, AND 1911 TO 1922.

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price-Levels.(a) Year 1901 =1,000.
		Values as Recorded.	Values Computed on Mass Prices of 1901.	Values as Recorded.	Values Computed on Mass Prices of 1901.	
I.	II.	III.	IV.	V.	VI.	VII.
	£	£	£	£	£	
1901 ..	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1906 ..	16,895,059	52,842,704	42,005,330	69,737,763	58,900,389	1258
1911 ..	11,561,639	67,920,619	58,501,825	79,482,258	70,063,464	1161
1912 ..	11,881,216	67,214,874	53,218,427	79,096,090	65,099,643	1263
1913 ..	3,164,105	75,407,664	58,455,553	78,571,769	61,619,658	1290
1914-15 ..	2,474,197	58,118,379	44,740,861	60,592,576	47,215,058	1299
1915-16 ..	10,391,019	64,387,302	40,469,705	74,778,321	50,860,724	1591
1916-17 ..	11,521,815	86,433,667	43,985,398	97,955,482	55,507,213	1965
1917-18 ..	6,483,265	74,945,956	35,962,551	81,429,221	42,445,816	2084
1918-19 ..	7,252,202	106,711,774	52,489,805	113,963,976	59,742,007	2033
1919-20 ..	5,654,909b	144,168,600	64,103,424	149,823,509	68,516,379	2249
1920-21 ..	5,371,421b	126,787,491	56,249,996	132,158,912	60,330,722	2254
1921-22 ..	3,487,615b	124,358,920	72,259,686	127,846,535	75,225,164	1721

(a) These are index-numbers for the total group of exports, excluding specie and gold bullion.

(b) Including premium on gold exported 1919-20, £1,241,954, or 28.8 per cent. on standard price; 1920-21, £1,290,695, or 32.1 per cent.; 1921-22, £522,137 or 17.6 per cent.

4. Price-Levels of Exports.—The following table of index-numbers shows the variations in price of the different classes of goods exported, grouped according to their industrial origin:—

AUSTRALIAN EXPORTS.—PRICE-LEVELS, 1901, 1906 AND 1911 TO 1922.

Year.	Agricultural Produce.	Pastoral Produce.	Dairy Produce.	Mineral Produce.(a)	Miscellaneous.	All Classes.(a)
1901 ..	1,000	1,000	1,000	1,000	1,000	1,000
1906 ..	1,155	1,344	1,021	1,113	991	1,258
1911 ..	1,243	1,193	1,085	944	1,227	1,161
1912 ..	1,388	1,268	1,198	1,133	1,254	1,263
1913 ..	1,324	1,334	1,124	1,114	1,329	1,290
1914-15 ..	1,480	1,323	1,176	1,066	1,221	1,299
1915-16 ..	1,927	1,589	1,488	1,393	1,106	1,591
1916-17 ..	1,726	2,131	1,690	1,650	1,357	1,965
1917-18 ..	1,954	2,250	1,624	1,760	1,401	2,084
1918-19 ..	1,864	2,166	1,855	1,692	1,775	2,033
1919-20 ..	2,145	2,393	2,023	1,787	2,150	2,249
1920-21 ..	3,177	2,093	2,854	1,813	2,179	2,254
1921-22 ..	2,108	1,717	1,507	1,427	1,845	1,721

(a) Excluding gold which, since February, 1919, has been exported at a premium. During the year 1919-20 the premium realized was 28.8 per cent., during 1920-21, 32.1 per cent., and during 1921-22, 17.6 per cent.

The lower index-number for agricultural produce exported during 1916-17 is due to the lower price registered for wheat, viz., 4s. 10d. per bushel as against 5s. 6d. per bushel for 1915-16.

Although the fall in prices which occurred during 1921-22 was general throughout all the main groups of exported commodities, it was most pronounced in the dairy produce group, the average price registered for butter in the export returns having fallen from 2s. 4½d. per lb. in 1920-21 to 1s. 3d. per lb. in 1921-22. At the same time the price of wheat fell from 9s. to 5s. 9d. per bushel.

§ 11. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of record, are more or less identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices fixed from time to time by a commission constituted for the purpose. In later years, moreover, a very substantial difference in the value of imports would arise from the different methods of converting the moneys of foreign countries, *i.e.*, from the application of current rates of exchange or of the mint par. Lastly, the figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represented, prior to the war, approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United Kingdom, 15 per cent.; whereas in Australia the same element represents, normally, about 4 per cent., and in New Zealand even less.

2. **“Special Trade” of Various Countries.**—Special trade may be defined according to the interpretation of the British Board of Trade, as (*a*) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export) and (*b*) exports of domestic products.

In the following table the figures relate as nearly as possible to imports entered for consumption in the various countries specified, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production. Further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless, a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest. The figures relating to foreign countries have been converted on the average of the commercial rates of exchange for the years subsequent to the war.

IMPORTS FOR HOME CONSUMPTION, AND EXPORTS OF DOMESTIC PRODUCTS —INCLUDING BULLION AND SPECIE, VARIOUS COUNTRIES.

Country.	Year ended—	Trade.			Trade per Inhabitant.		
		Imports.	Exports.	Total.	Imports.	Exports.	Total.
		£1,000	£1,000	£1,000	£ s. d.	£ s. d.	£ s. d.
Commonwealth of Australia	30/6/22	98,707	123,488	222,195	17 18 3	22 8 3	40 6 6
	31/12/13	76,323	75,113	151,436	15 17 11	15 12 10	31 10 9
United Kingdom (a)	31/12/22	900,140	720,496	1,620,636	19 0 7	15 4 7	34 5 2
	31/12/13	671,265	525,461	1,196,726	14 11 8	11 8 4	26 0 0
Canada (a)	30/6/22	153,869	155,129	308,998	17 0 9	17 3 7	34 4 4
	31/3/14	132,019	89,915	221,934	16 13 6	11 7 2	28 0 8
New Zealand	31/12/22	35,006	42,726	77,732	27 13 3	33 15 2	61 8 5
	31/12/13	21,879	22,578	44,457	20 10 7	21 3 8	41 14 3
Union of South Africa	31/12/22	51,557	60,334	111,891	7 8 11	8 14 4	16 3 3
United States of America	31/12/21	640,058	1,117,098	1,757,156	6 1 1	10 11 4	16 12 5
(a)	30/6/14	391,780	493,182	884,962	4 0 0	5 0 8	9 0 8
Argentine Republic	31/12/20	52,416	206,208	258,624	6 6 7	24 18 2	31 4 9
Belgium	31/12/21	194,367	138,166	332,533	25 8 8	18 1 7	43 10 3
	31/12/12	210,211	160,054	370,265	27 15 3	21 2 10	48 18 1
Denmark (a)	31/12/21	76,762	64,948	141,710	26 6 4	21 8 5	47 14 9
	31/12/12	41,954	33,940	75,894	14 19 8	12 2 5	27 2 1
France	31/12/21	455,832	417,211	873,043	11 12 6	10 12 9	22 5 3
	31/12/12	350,482	281,495	631,977	8 16 9	7 1 11	15 18 8
German Empire	31/12/12	541,675	447,392	989,067	8 3 9	6 15 3	14 19 0
Italy	31/3/22	141,530	82,239	223,769	3 10 7	2 1 1	5 11 8
	31/12/12	149,113	97,536	246,649	4 5 2	2 15 8	7 0 10
Japan (a)	31/12/21	198,788	152,463	351,251	3 11 1	2 14 5	6 5 6
	31/12/12	66,007	57,972	123,979	1 5 3	1 2 2	2 7 5
Netherlands	31/12/20	314,717	163,412	478,129	46 8 6	24 2 2	70 10 8
Norway	31/12/17	92,295	43,779	136,074	35 1 4	16 12 8	51 4 0
	31/12/12	28,756	18,147	46,903	11 15 9	7 8 10	19 4 7
Spain (a)	31/12/21	44,315	28,061	72,376	2 2 10	1 7 1	3 9 11
	31/12/12	42,089	41,826	83,915	2 2 9	2 2 6	4 5 3
Sweden (a)	31/12/21	74,006	64,131	138,137	12 14 7	11 0 7	23 15 2
	31/12/12	44,095	42,257	86,352	7 17 4	7 10 10	15 8 2
Switzerland	31/12/21	101,697	79,789	181,486	25 16 7	20 5 4	46 1 11
(a)	31/12/12	81,577	55,629	137,206	21 6 7	14 10 11	35 17 6

(a) Excluding Bullion and Specie.

§ 12. Trade of the United Kingdom with Australia, compared with that of Competing Countries.

1. Proportion of Trade from United Kingdom and Competing Countries.—The failure of the United Kingdom to maintain the position formerly held in the import trade of Australia has been a matter of more than ordinary interest for some years. Since 1908, a permanent resident Commissioner appointed by the British Board of Trade has been established in Australia for the purpose of advising manufacturers and merchants in the United Kingdom with regard to Australian trade affairs. From the 8th August, 1907, the Commonwealth Customs Tariffs have provided special rates in favour of goods from the United Kingdom with the object of assisting the British manufacturer to retain or improve his position in this market.

Previous issues of this Year Book have contained a table showing, since 1886, the proportions of the imports into Australia which were shipped from the United Kingdom, Germany, and the United States respectively. The records according to "Countries of Shipment" having been discontinued, references to this aspect of the trade of Australia will be restricted, in future, to the trade according to "Countries of Origin," for which accurate information is available from 1908.

It may be pointed out that there are many items of magnitude in Australian imports, such as tea, unmanufactured tobacco, petroleum products, timber, etc., which the United Kingdom could not possibly supply. Consequently, in any investigation concerning the relative position of the United Kingdom in the Australian market, inquiries must be

confined to those classes of goods which are produced in the United Kingdom. The principal of these competitive classes are shown in the following tables:—

AUSTRALIAN IMPORTS.—PRODUCTS OF VARIOUS COUNTRIES, 1913 AND 1918-19 TO 1921-22.

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
	£	£	£	£	£	£	£
Foodstuffs of animal origin	{ 1913 ..	301,025	3,093	12,071	6,988	289,229	947,697
	{ 1918-19	26,218	115	..	23,034	205,063	585,562
	{ 1919-20	311,934	1,681	..	13,554	429,137	1,459,212
	{ 1920-21	406,982	2,557	..	5,695	310,202	1,224,099
	{ 1921-22	345,803	3,145	..	6,423	390,545	1,535,308
Alcoholic liquors ..	{ 1913 ..	1,227,561	343,403	143,477	1,755	2,805	1,947,248
	{ 1918-19	961,875	65,897	..	993	15,826	1,263,324
	{ 1919-20	941,290	219,271	85	947	1,331	1,308,686
	{ 1920-21	1,443,554	346,059	..	480	53	2,000,248
	{ 1921-22	1,364,857	134,430	..	126	..	1,583,382
Apparel (including boots), Textiles, etc.	{ 1913 ..	11,920,600	960,377	1,698,283	475,954	621,954	19,559,304
	{ 1918-19	19,880,413	912,808	42	4,810,637	4,109,844	36,237,171
	{ 1919-20	15,801,397	1,315,034	1	2,574,280	2,906,214	26,702,771
	{ 1920-21	32,005,480	1,807,234	55	3,209,647	4,046,592	49,877,538
	{ 1921-22	21,537,704	1,446,461	275	2,754,541	1,607,476	32,511,316
Metals unmanufactured or partly manufactured (a)	{ 1913 ..	1,202,514	3,674	302,466	..	108,000	1,899,846
	{ 1918-19	305,242	2	416	22,053	335,340	772,880
	{ 1919-20	608,121	11	..	2,353	245,125	924,366
	{ 1920-21	987,815	11,443	11	2,577	195,007	1,509,914
	{ 1921-22	799,673	47,376	696	722	67,525	1,252,466
Manufactures of metals (including machinery)	{ 1913 ..	12,027,377	211,610	1,962,154	7,601	3,680,720	19,152,660
	{ 1918-19	6,325,224	12,200	3,010	524,280	8,509,002	16,995,544
	{ 1919-20	11,907,307	34,029	4,059	142,200	8,101,993	21,573,114
	{ 1920-21	22,737,100	220,325	10,515	277,014	13,153,975	39,148,721
	{ 1921-22	12,454,671	288,983	69,357	65,296	6,991,973	22,524,855
Paper and stationery	{ 1913 ..	1,789,577	21,930	266,483	10,656	403,679	3,134,750
	{ 1918-19	1,293,255	57,196	1,380	177,871	2,442,333	5,543,880
	{ 1919-20	1,290,747	70,760	146	85,439	1,287,938	4,156,626
	{ 1920-21	3,538,515	109,027	1,352	106,649	1,325,978	8,978,897
	{ 1921-22	2,301,177	122,122	2,337	17,744	523,048	4,855,564
Jewellery, time-pieces, and fancy goods	{ 1913 ..	506,608	85,430	250,846	19,192	136,965	1,410,555
	{ 1918-19	303,948	139,792	263	258,312	319,656	1,600,868
	{ 1919-20	630,605	182,035	12	122,684	258,840	2,029,268
	{ 1920-21	998,809	204,777	12	154,527	342,838	2,538,269
	{ 1921-22	716,910	102,551	24	81,203	227,579	1,698,412
Earthenware, cements, glass, etc.	{ 1913 ..	650,867	40,188	457,810	21,493	62,895	1,568,531
	{ 1918-19	387,472	1,886	138	476,007	587,569	1,467,886
	{ 1919-20	517,992	5,647	7	328,809	251,907	1,239,685
	{ 1920-21	1,234,656	13,650	17	629,028	323,233	3,185,152
	{ 1921-22	1,200,131	20,252	25	202,257	166,886	1,887,905
Drugs, chemicals, fertilizers	{ 1913 ..	1,020,141	245,413	303,447	139,106	205,123	2,715,127
	{ 1918-19	1,530,004	316,008	501	519,327	1,284,492	4,425,073
	{ 1919-20	1,357,429	377,518	63	111,340	876,931	3,648,755
	{ 1920-21	2,413,605	425,074	37,409	88,435	1,241,070	5,587,575
	{ 1921-22	1,716,328	228,559	5,451	50,740	619,059	3,553,377
Leather and manufactures thereof and substitutes therefor, including indiarubber (excluding boots)	{ 1913 ..	515,169	68,746	347,550	692	435,071	1,749,046
	{ 1918-19	497,796	86,486	3	21,198	1,009,402	2,373,188
	{ 1919-20	459,949	74,571	..	6,261	1,065,866	2,192,520
	{ 1920-21	946,335	169,654	..	4,324	1,314,408	3,277,489
	{ 1921-22	571,679	135,583	2	1,178	515,899	1,659,544
Total above-mentioned imports	{ 1913 ..	31,161,439	1,983,864	5,744,587	683,437	5,946,441	54,084,764
	{ 1918-19	31,511,447	1,592,390	5,753	6,833,712	18,818,527	71,265,376
	{ 1919-20	33,835,771	2,280,557	4,373	3,387,867	15,425,282	65,235,003
	{ 1920-21	66,712,851	3,309,800	49,371	4,478,376	22,253,256	117,327,002
	{ 1921-22	43,008,933	2,529,462	78,167	3,180,230	11,109,990	73,062,129
Total imports (less bullion and specie)	{ 1913 ..	40,948,803	2,222,631	7,029,325	950,300	10,907,512	78,196,109
	{ 1918-19	34,563,860	1,651,833	6,556	8,203,725	27,180,656	95,264,120
	{ 1919-20	38,514,975	2,422,304	6,848	4,222,511	23,824,255	98,928,206
	{ 1920-21	76,845,973	3,597,811	52,432	5,230,039	36,110,081	163,781,682
	{ 1921-22	52,987,879	2,731,739	79,447	3,581,614	18,822,364	103,022,132

(a) Mainly pig iron and bar and rod iron. Gold and silver bullion not included.

**AUSTRALIAN IMPORTS.—PRODUCTS OF VARIOUS COUNTRIES.—PERCENTAGES.
1913 AND 1918-19 TO 1921-22.**

Nature of Imports.	Year.	United Kingdom.	France.	Germany.	Japan.	U.S. of America.	All Countries.
Foodstuffs of animal origin	{ 1913 ..	31.77	0.33	12.74	0.74	30.52	100
	{ 1918-19	4.48	0.02	..	3.93	35.02	100
	{ 1919-20	21.38	0.12	..	0.93	29.41	100
	{ 1920-21	33.25	0.21	..	0.47	25.35	100
	{ 1921-22	22.52	0.20	..	0.42	25.43	100
Alcoholic liquors ..	{ 1913 ..	63.04	17.64	7.37	0.09	0.14	100
	{ 1918-19	76.14	5.22	..	0.08	1.25	100
	{ 1919-20	71.93	16.76	0.00	0.07	1.02	100
	{ 1920-21	72.19	17.30	..	0.00	0.00	100
	{ 1921-22	86.18	8.49	..	0.01	..	100
Apparel (including boots, textiles, etc.)	{ 1913 ..	60.94	4.91	8.68	2.43	3.18	100
	{ 1918-19	54.86	2.52	0.00	13.28	11.34	100
	{ 1919-20	59.18	4.92	0.00	9.64	10.88	100
	{ 1920-21	64.17	3.62	0.00	6.43	8.11	100
	{ 1921-22	66.22	4.45	0.00	8.47	4.94	100
Metals unmanufactured or partly manufactured	{ 1913 ..	63.29	0.19	15.92	..	5.69	100
	{ 1918-19	39.49	0.00	0.54	2.85	43.39	100
	{ 1919-20	65.79	0.00	..	0.25	26.52	100
	{ 1920-21	65.42	0.76	0.00	0.17	12.91	100
	{ 1921-22	63.85	3.78	0.06	0.06	5.39	100
Manufactures of metal (including machinery)	{ 1913 ..	62.80	1.10	10.24	0.04	19.22	100
	{ 1918-19	37.22	0.07	0.02	3.08	50.07	100
	{ 1919-20	55.20	0.16	0.02	0.66	37.56	100
	{ 1920-21	58.09	0.56	0.03	0.71	33.60	100
	{ 1921-22	55.30	1.28	0.31	0.29	31.04	100
Paper and stationery	{ 1913 ..	57.41	0.70	8.50	0.34	12.88	100
	{ 1918-19	23.33	1.03	0.02	3.21	44.05	100
	{ 1919-20	31.26	1.70	0.00	2.06	30.99	100
	{ 1920-21	39.41	1.21	0.01	1.18	14.76	100
	{ 1921-22	47.39	2.51	0.05	0.37	10.77	100
Jewellery, time-pieces, and fancy goods	{ 1913 ..	35.92	6.06	17.77	1.36	9.71	100
	{ 1918-19	18.99	8.73	0.02	16.14	19.97	100
	{ 1919-20	31.08	8.97	0.00	6.05	12.76	100
	{ 1920-21	39.35	8.07	0.00	6.09	13.51	100
	{ 1921-22	42.21	6.04	0.00	4.78	13.40	100
Earthenware, cements, glass, etc.	{ 1913 ..	41.49	2.56	29.19	1.37	4.01	100
	{ 1918-19	26.40	0.13	0.01	32.43	40.03	100
	{ 1919-20	41.78	0.46	0.00	26.52	20.32	100
	{ 1920-21	38.74	0.43	0.00	19.74	10.14	100
	{ 1921-22	63.56	1.07	0.00	10.71	8.84	100
Drugs, chemicals, and fertilizers	{ 1913 ..	37.57	9.04	11.18	5.12	7.55	100
	{ 1918-19	34.58	7.14	0.00	11.74	29.03	100
	{ 1919-20	37.20	10.35	0.00	3.05	24.03	100
	{ 1920-21	43.20	7.60	0.67	1.58	22.21	100
	{ 1921-22	48.30	6.43	0.15	1.43	17.42	100
Leather and manufactures thereof, and substitutes therefor, including indiarubber (excluding boots)	{ 1913 ..	29.45	3.93	19.87	0.04	24.88	100
	{ 1918-19	20.98	3.64	0.00	0.89	42.53	100
	{ 1919-20	20.98	3.40	0.00	0.29	48.61	100
	{ 1920-21	28.87	5.18	..	0.01	40.11	100
	{ 1921-22	34.45	8.17	0.00	0.07	31.09	100
Total above-mentioned articles	{ 1913 ..	57.62	3.67	10.62	1.26	10.99	100
	{ 1918-19	44.22	2.23	0.01	9.59	26.41	100
	{ 1919-20	51.87	3.50	0.07	5.19	23.65	100
	{ 1920-21	56.86	2.82	0.04	3.82	18.97	100
	{ 1921-22	58.86	3.46	0.11	4.35	15.20	100
Total imports (less bullion and specie)	{ 1913 ..	52.37	2.84	8.99	1.21	13.95	100
	{ 1918-19	36.43	1.74	0.01	8.65	28.65	100
	{ 1919-20	38.94	2.45	0.07	4.26	24.09	100
	{ 1920-21	46.92	2.20	0.03	3.19	22.05	100
	{ 1921-22	51.44	2.65	0.08	3.48	18.27	100

It may also be mentioned here that the value of the imports from the United States and from Japan during the later years are somewhat understated, inasmuch as the values have been converted from the currencies of those countries on the basis of the par of exchange, whereas the actual exchange rates were considerably in their favour. The effect of this method of conversion, except in the case of Italy, did not reach serious dimensions until the year 1919-20. This method of conversion, which was applied to values for Customs duty also, was an advantage to Japan and to the United States in the Australian market by reducing the amount of duty to be paid on goods subject to *ad valorem* rates. In consequence of using the par of exchange, the figures given in the foregoing tables, though taken from the official records, are somewhat misleading. As the practice of converting import values on the par of exchange was continued until the 8th December, 1920, it follows that the figures for 1920-21 are also affected to some extent. The position of the United Kingdom in the Australian market has been recovered to such a marked extent that minor defects in the records are, however, of little consequence in the results.

From the foregoing tables it is clear that the value of the trade for which the United Kingdom is a substantial competitor increased from £54,084,764 in 1913, to £73,062,129 in 1921-22. Of this larger amount the United Kingdom supplied 58.86 per cent. as against 57.62 per cent. of similar imports in 1913. In 1918-19 the share of the United Kingdom in this trade represented only 44.22 per cent. The share of Japan increased from 1.26 per cent. in 1913 to 9.59 per cent. in 1918-19, but fell to 4.35 per cent. in 1921-22. Not only was Japan's *proportion* of the trade less during 1921-22 than in 1918-19, but the *actual value* was less by £3,653,482. Although the value of the imports of competitive goods from Japan is much less than from the United States of America, the rate of increase has been far greater—from £683,437 in 1913 to £3,180,230 in 1921-22, equal to 360 per cent. The classes of goods chiefly responsible for this increase are as follows:—Apparel and textiles, metal manufactures and machinery, china and porcelain ware, earthenware, glass and glassware, paper and stationery, and fancy goods.

The position of the United States in this competitive trade has improved from 10.99 per cent. in 1913 to 15.20 per cent. in 1921-22, though it is much lower than in 1918-19, when it represented 26.41 per cent. In the latest pre-war year (1913), the value of goods from the United States in the "competitive" groups was £5,946,441, whereas in 1921-22 it was £11,109,990. The following are the principal groups of commodities in which United States sales to Australia during 1921-22 were increased over those of 1913:—Apparel and textiles, manufactured metals and machinery (including vehicles), india-rubber and manufactures thereof, and drugs and chemicals.

The position of France has declined from 3.67 per cent. in 1913 to 3.46 per cent. in 1921-22, though some improvement is evident as compared with 1918-19.

The proportion of the imports supplied by Germany in 1913 was 10.62 per cent. as compared with 57.62 per cent. from the United Kingdom; 3.67 per cent. from France; 1.26 per cent. from Japan and 10.99 per cent. from the United States. The corresponding figures for the year 1921-22 were:—Germany, 0.11 per cent.; United Kingdom, 58.86 per cent.; France, 3.46 per cent.; Japan, 4.35 per cent. and the United States, 15.20 per cent.

From the foregoing it will be seen that the more prominent position held by the United States of America and by Japan in the Australia import market in 1921-22 was not at the expense of the United Kingdom, but, rather, represented a substitution of the trade formerly supplied by Germany.

Comparing the percentages of imports from each country during the period 1918-19 to 1921-22 it will be noticed that the proportions supplied by the United Kingdom and France increased, while those from Japan and the United States decreased.

2. Preferential Tariffs.—The Commonwealth Tariff Act of 1908 provided preferential tariff rates in favour of goods produced or manufactured in the United Kingdom. Subsequent amendments of the Tariff have extended the list of articles to which the preferential rates apply. In the schedule submitted to Parliament on the 3rd December, 1914, the extension of the number of preferential rates was very material, and was accompanied in many instances by an increase of the margin in favour of the United Kingdom. This favourable treatment of the United Kingdom was again extended in both directions by the Tariff submitted on the 24th March, 1920 (Tariff Act 1921).

On the introduction of the preferential treatment of British goods by the Commonwealth Tariff, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it has been required, in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture shall have been performed in the United Kingdom, and that the expenditure on material of British production and/or British labour shall have been not less than one-fourth of the factory or works cost of the goods in the finished state.

On the basis of the imports during 1913, the preferential provisions of the Tariff of 1908-11 covered 65 per cent. of the imports of merchandise of United Kingdom origin, the margin of preference being equal to 5.08 per cent. of the value of the goods. On the same basis the Tariff of 1921 has extended the application of the preferential Tariff rates to 90 per cent. of the imports from the United Kingdom, and, at the same time, has increased the margin of preference to 12.22 per cent. *ad valorem*. For the purpose of these computations an unusual importation of warships valued at £2,495,000 has not been taken into account. The average equivalent *ad valorem* rate of duty payable under the tariff of 1921 on goods of United Kingdom origin is about 25 per cent., whereas the same goods under the general Tariff rates would be called upon to pay an average rate of about 37½ per cent.

An application of the Tariff of 1921 to the imports from the United Kingdom entered for home consumption during the year 1921-22 shows that about 90 per cent. of these imports were favoured by a margin of 12.61 per cent. *ad valorem*, representing about £5,573,000 additional duty which would have been paid had the same goods been imported under the general Tariff rates.

3. Reciprocal Tariffs.—(i) *General.* The Tariff Act of 1921 introduced a new feature into Australian Tariffs in the form of an Intermediate Tariff. In submitting the schedule to Parliament, the Minister for Trade and Customs made the following statement of the object of the Intermediate Tariff:—" . . . the Minister is empowered under the Bill to enter into reciprocal arrangements with other Dominions of the British Crown. The Minister will be able, if we can arrange a satisfactory reciprocal agreement, to extend to other Dominions on individual items the British preference rate, or the intermediate rate, or, it may be, the general rate. Such agreements will be subject to the ratification of Parliament. The provision simply means that if any of our sister self-governing Dominions desires to enter into reciprocal trade relationships with us, the Minister, with the British Preference Tariff, the Intermediate Tariff, and the General Tariff before him, may bargain with the sister Dominion and come to an agreement which, as I say, must subsequently be ratified by Parliament. . . . There is a provision of a somewhat similar character in regard to other countries than the Dominions, the only difference being that the Minister is empowered to extend to countries other than the Dominions only the Intermediate Tariff; that is to say, in entering into such negotiations, he is precluded from offering to those countries what we might term, for the purposes of this Bill, the Empire rate. He is confined in his negotiations with these other countries to the Intermediate Tariff."

(ii) *Union of South Africa.* Until recently, the Union of South Africa was the only British Dominion with which Australia had a reciprocal Tariff arrangement. The Commonwealth Customs Tariff (South African Preference) Act, No. 17 of 1906, and subsequent amending Acts have provided preferential rates of duty to be applied to certain imported goods "when those goods are imported from and are the produce or manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union."

(iii) *Dominion of New Zealand.* On the 11th April, 1922, an agreement was made between the Commonwealth of Australia and the Dominion of New Zealand whereby goods specified in the schedule attached to the agreement should be admitted at the rates of duty set out in the schedule. In addition to the goods specially mentioned in the schedule, it is provided that "all other goods being the produce or manufacture of Australia or New Zealand shall be dutiable at the rates applicable to goods being the produce or manufacture of the United Kingdom, upon entry into New Zealand or Australia

respectively." This agreement was ratified by the Commonwealth Parliament by the Customs Tariff (New Zealand Preference) 1922, and, by Proclamation dated 24th August, 1922, came into operation on the 1st September, 1922.

(iv) *Dominion of Canada.* Although previous efforts to bring about reciprocal Tariff arrangements between Canada and Australia have not been successful, further negotiations with this object in view are in progress.

4. Preferential Tariff of the United Kingdom.—The post-war Tariff of the United Kingdom provides Preferential Customs Rates on certain goods where they are shown to the satisfaction of the Commissioners of Customs and Excise to have been consigned from and grown, produced, or manufactured in the British Empire. Manufactured articles generally are not entitled to the preferential rates unless 25 per cent. of their value is the result of labour within the British Empire. The principal items of interest to Australia which are accorded preferential treatment under the Tariff of the United Kingdom are:—Fruits, dried and preserved; jam; fruit pulp; preserved milk; wine; and brandy.

§ 13. Customs Tariff of 1921.

1. General.—The Commonwealth Customs Duties are levied partially in the form of *ad valorem* duties and partially in the form of fixed rates per unit of quantity; in a few instances both these forms are complementary, and in a few other instances provision is made for the application of fixed rates or *ad valorem* rates according to which will produce the greater amount of duty. Under the Tariff of 1921 about 46 per cent. of imports (on the basis of the imports of 1913) would be subject to *ad valorem* rates, about 25 per cent. would pay fixed rate duties, and the balance—about 29 per cent.—would be free of duty.

2. Comparisons with Tariff of 1908–11.—The following table shows approximately the changes made in the average equivalent *ad valorem* rates of duty on the various classes of imports by the Tariff of 1921 in comparison with the Tariff of 1908–11. The results given have been obtained by applying, as closely as possible, the rates of duty prescribed by each Tariff to the imports of 1913. The year 1913 has been selected as representing more nearly than any subsequent year the normal composition of Commonwealth imports. Owing to the many subdivisions which have been made in the items of the earlier Tariff by the recent revision, and the inadequacy of the statistics of imports to meet these changes, the results must be taken as merely approximate to the truth. As the imports for 1913 have been taken as the basis of the comparison it has been necessary to make allowance for the increase in prices in computing the *ad valorem* equivalent of the fixed rate duties in operation under the Tariff of 1921. For this purpose the average prices for similar goods imported during 1921–22 have been taken.

From the results given it would appear that the Tariff of 1921 has reduced the proportion of imports which were free from duty from 42.96 per cent. to 29.12 per cent., or, conversely, has increased the proportion of dutiable goods from 57.04 per cent. to 70.88 per cent. This result is due in the most part (75 per cent.) to the imposition of duties of general application, and to a lesser degree (25 per cent.) to duties imposed for the purpose of providing preference to the manufactures of the United Kingdom.

The average *ad valorem* rate of duty over all merchandise—both dutiable and free—has been raised from 17.08 per cent. to 22.63 per cent. This comparatively small increase in what is the equivalent of an average *ad valorem* rate is due to the effect of increased prices for those goods which are subject to fixed rate duties. In order to determine what change has been made in the average rate of duty over all goods, it is usual to put all rates on a common *ad valorem* basis. Notwithstanding that in numerous cases very substantial increases were made in these fixed rate duties the increase in price was so much greater, that their *ad valorem* incidence is less, at the present time, under the 1921 Tariff than it was when the Tariff of 1908–11 was in operation. A simple illustration, to make this clear, may not be out of place.

AUSTRALIAN CUSTOMS TARIFFS OF 1908-11 AND OF 1921 COMPARED.

Class of Imports.	Tariff of 1908-11.			Tariff of 1921.		
	Per-centage of Free Goods.	Equivalent <i>ad val.</i> Rates of Duty on—		Per-centage of Free Goods.	Equivalent <i>ad val.</i> Rates of Duty on—	
		All Mer-chandise.	All Dutiable Mer-chandise.		All Mer-chandise.	All Dutiable Mer-chandise.
	%	%	%	%	%	%
I. Foodstuffs of Animal Origin ..	10.42	15.43	17.22	10.42	14.71	16.44
II. Foodstuffs of Vegetable Origin ..	5.33	33.11	34.97	12.00	23.75	26.98
III. Beverages (non-alcoholic) and Substances used in making ..	79.62	4.36	21.38	79.62	4.08	20.04
IV. Spirituous and Alcoholic Liquors ..	00.00	144.95	144.95	00.00	106.92	106.92
V. Tobacco and preparations thereof ..	00.00	159.00	159.00	00.00	85.32	85.32
VI. Live Animals ..	87.70	00.07	00.59	100.00	00.00	00.00
VII. Animal Substances (mainly un-manufactured) ..	80.37	2.70	13.76	80.37	3.64	18.56
VIII. Vegetable Substances and Fibres ..	87.89	3.52	29.01	79.31	6.51	31.46
IX. (i) Apparel ..	15.12	24.75	29.15	4.67	34.85	36.55
(ii) Textiles ..	45.39	9.45	17.31	44.60	12.40	22.36
(iii) Bags and Cordage ..	91.30	1.91	21.92	91.30	2.42	27.88
X. Oils, Fats, and Waxes ..	32.32	11.12	16.43	27.72	9.73	13.46
XI. Paints and Varnishes ..	4.43	16.25	17.00	4.07	21.33	22.23
XII. Stones and Minerals used in-dustrially ..	16.54	19.27	23.10	6.60	21.30	22.80
XIII. Ores and Mineral Earths ..	100.00	..	..	63.78	19.28	53.22
XIV. (i) Machines and Machinery, Agricultural Implements and Machinery ..	39.47	12.44	20.56	4.62	32.58	34.16
Other Machines and Machinery ..	25.92	14.80	19.98	10.60	23.62	26.43
Total Machines and Machinery ..	27.42	14.54	20.04	9.94	24.63	27.34
(ii) Manufactures of Metals, iron and steel (simpler forms) ..	52.18	3.94	8.25	1.60	20.83	21.17
Other Manufactures of Metals ..	42.33	11.64	20.18	16.74	22.83	27.43
Total Manufactures of Metals ..	47.22	7.81	14.80	9.22	20.74	22.85
XV. Rubber and Manufactures of Rubber ..	34.46	15.43	23.54	34.46	23.21	35.42
Leather and Manufactures of Leather ..	3.34	18.72	19.37	1.94	31.37	31.99
XVI. Wood and Wicker, raw and manufactured ..	7.70	15.53	16.83	2.86	21.64	22.28
XVII. Earthenware, Cements, China, Glass, and Stoneware ..	7.13	25.71	27.67	2.38	28.44	29.13
XVIII. (i) Paper ..	71.75	6.30	22.30	2.34	15.43	15.80
(ii) Stationery ..	67.46	7.82	24.03	67.04	10.05	30.47
XIX. Jewellery, Timepieces, and Fancy Goods ..	20.47	20.39	25.64	20.48	32.55	40.94
XX. Optical Surgical and Scientific Instruments ..	75.38	3.52	14.26	21.91	22.37	28.65
XXI. Drugs, Chemicals, and Fertilizers ..	71.50	6.82	23.92	39.19	14.82	24.37
XXII. Miscellaneous ..	75.93	5.68	23.60	73.08	8.24	30.61
Total Merchandise ..	42.96	17.08	29.96	29.12	22.63	31.93
Total Merchandise, excluding Alcoholic Liquors and Tobacco ..	44.76	11.66	21.10	30.31	18.17	26.26

NOTE.—In computing the results given in the above table it has been assumed that all imports during 1913 were entered for consumption during the year and that all deferred duties were in operation.

Under the Tariff of 1908-11 the duty on whisky was 14s. per gallon, while under the Tariff of 1921 it is 30s. per gallon—an actual increase in duty of 114 per cent. In 1913 the import value of a gallon of bulk whisky was 6s. 6d., whereas in 1921-22 a similar gallon of whisky was valued at 26s. 5d.—an increase in price of 306 per cent. Thus under the 1908-11 Tariff a gallon of whisky valued at 6s. 6d. paid duty amounting to 14s. or 215 per cent. *ad valorem*, while under the Tariff of 1921 a gallon of whisky valued at 26s. 5d. would pay 30s. which, however, would represent only 113 per cent. *ad valorem*. The same thing applies, in varying degree, to all goods subject to fixed rate duties.

The classes most conspicuously affected in this way are those numbered I. to V. in the accompanying table, and it will be noticed that for each of these classes the rates

of duty on the *ad valorem* basis are lower under the 1921 Tariff than before. These results do not indicate a reduction of duties, but merely an increase in prices greater than the increase in duties. As prices revert towards the pre-war level the duties collected under fixed rates will, of course, increase relatively to the cost of the goods.

§ 14. Commonwealth Trade Representation in Overseas Countries.

The Commonwealth is represented in the United Kingdom by the High Commissioner for Australia (Rt. Hon. Sir Joseph Cook, P.C., G.C.M.G.), with headquarters at Australia House, London. Oversea trade matters affecting Australia come within the scope of the duties attaching to the office of High Commissioner.

The Commonwealth has a Trade Representative in France, with headquarters at Paris. This official is attached to the High Commissioner's office, London.

The first appointment of a Commonwealth Trade Commissioner for the United States of America was made in 1918, when Mr. (now Sir) H. Y. Braddon was appointed. He was succeeded in 1919 by Mr. (now Sir) M. Sheldon, who continued in office until 1922. Since his resignation and until the appointment of Mr. Donald Mackinnon on 1st June, 1923, the duties of the office were carried on by the Official Secretary, Mr. D. B. Edward, with headquarters at New York.

Early in 1921, Mr. E. S. Little was appointed as Commonwealth Trade Commissioner in China, with offices at Shanghai and Hong Kong, and in January, 1922, Mr. E. T. Sheaf was appointed Australian Trade Representative in the East, with headquarters at Singapore.

CHAPTER VII.

TRANSPORT AND COMMUNICATION.

A. SHIPPING.

§ 1. System of Record.

NOTE.—Owing to the general disorganization of shipping in consequence of the war, the figures relating to the war period given in the following tables are of little comparative significance.

So far as oversea vessels are concerned the system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each voyage without regard to the number of States visited.

On arrival of every vessel at a port in Australia, whether from an oversea country or from another port in Australia, the master is required to deliver to the Customs officer a form giving all particulars necessary for statistical purposes in regard to the ship, passengers, and cargo. Similarly, on departure from a port, a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Australian waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Census and Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above gives decidedly better results.

From the 1st July, 1914, the statistical year for the record of Trade and Shipping of Australia was altered from the calendar year to the fiscal year ending 30th June.

In all instances the tonnage quoted is net tonnage.

§ 2. Oversea Shipping.

1. **Total Movement.**—In previous issues of the Year Book particulars were given of the number and tonnage of vessels entered and cleared each year since 1822. In this and future issues particulars for the last five years only will be shown as in the following table, which gives the number and tonnage of steam and sailing vessels entering Australian ports from oversea during the years 1917–18 to 1921–22 :—

TOTAL OVERSEA SHIPPING, ENTERED.—AUSTRALIA, 1917-18 TO 1921-22.

Year.	Steam.		Sailing.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1917-18	790	2,126,994	289	329,763	1,079	2,456,757
1918-19	1,053	2,907,572	297	331,488	1,350	3,239,060
1919-20	1,265	3,842,735	211	198,809	1,476	4,041,544
1920-21	1,526	4,422,880	304	336,036	1,830	4,758,916
1921-22	1,429	4,466,655	138	93,726	1,567	4,560,381

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population.

OVERSEA SHIPPING.—VARIOUS COUNTRIES.

Country.	Calendar Year.	Tonnage Entered and Cleared.	
		Total. 000 omitted.	Per Inhabitant.
Australia	1922 ^(a)	9,081	1.64
Belgium	1922	34,428 ^(b)	4.60
Brazil	1922	44,904	1.47
Canada	1921	24,917	2.84
France	1922	62,208 ^(b)	1.59
Germany	1922	44,820	0.75
Great Britain	1922	103,008 ^(b)	2.18
India	1922	14,110 ^(b)	0.04
Japan	1921	55,872	0.73
Netherlands	1922	26,424 ^(b)	3.79
New Zealand	1921	3,885	2.95
Norway	1922	7,464 ^(b)	2.82
Spain	1921	36,012	1.69
Sweden	1922	21,324	3.58
Union of South Africa	1922	8,904	1.29
United States	1922	130,032 ^(c)	1.23

(a) To 30th June. (b) With cargoes only. (c) Exclusive of vessels trading on lakes and rivers between Canada and the United States.

3. **Shipping Communication with various Countries.**—In previous issues of the Year Book, tables were published showing the number and tonnage of ships recorded as arriving from and departing to particular countries. At the same time it was shown that such records were of no significance, for the reason that the tonnage of a vessel can be recorded against one country only, notwithstanding that the same vessel may carry cargo or passengers to or from Australia for several countries on the same voyage. For instance a mail steamer on a voyage from Europe to Australia, through the Suez Canal, may call at Antwerp, Bremerhaven, London, Marseilles, Genoa, Port Said, Aden and Colombo, yet can be credited only to one of these ports, to the exclusion of all the other ports from the records. Also, a number of vessels touch at New Zealand ports on their voyages to and from the United States of America and Canada, but their tonnages are not included in the records of Australian shipping trade with New Zealand. Perhaps a more striking example of the ineffectiveness of the records referred to is afforded by the recorded statistics of the shipping between South Africa and Australia. The advertised sailings from Australia to the United Kingdom via South African ports for the month of October, 1921, represented a net tonnage of 40,145, yet the statistical records showed none of this tonnage as to South Africa, but all was shown as to the United Kingdom. In view of this defect, it has been decided to discontinue the publication of the figures purporting to show the shipping communication with particular countries, and to restrict the statistics relating to the direction of the shipping to and from Australia to the following tables in which countries situated on the main trade routes are grouped together.

4. **General Direction of Shipping.**—A grouping of countries into larger geographical divisions, as in the following tables, shows more readily the general direction of Australian shipping, and, to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes. The figures relating to Africa, however, are still subject to the limitations referred to in the previous sub-section.

OVERSEA SHIPPING, AUSTRALIA.—DIRECTION, 1917-18 TO 1921-22.

Countries.	Cargo and Ballast.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
TONNAGE ENTERED.						
United Kingdom and European Countries	Cargo	404,661	607,680	982,237	1,102,994	1,333,469
	Ballast	166,693	348,719	477,183	269,351	204,680
New Zealand	Cargo	395,271	393,927	411,819	518,789	421,365
	Ballast	76,248	98,691	173,601	350,370	213,347
Asiatic Countries and Islands in the Pacific	Cargo	641,471	619,174	682,592	837,195	686,886
	Ballast	62,419	296,264	538,630	631,004	794,177
Africa	Cargo	80,574	107,607	50,982	21,298	36,170
	Ballast	87,236	254,878	254,527	236,320	215,841
North and Central America	Cargo	440,889	490,592	454,830	747,599	629,688
	Ballast	..	14,895	3,642	8,747	15,940
South America	Cargo	5,703	1,179	11,501	8,236	1,179
	Ballast	43,708	5,454	..	27,013	7,641
Unspecified(a)	Cargo	32,206	..	..	..	..
	Ballast	19,678	..	..	..	..
	Cargo	2,000,775	2,220,159	2,593,961	3,236,111	3,108,757
	Ballast	455,982	1,018,901	1,447,583	1,522,805	1,451,624
Total		2,456,757	3,239,060	4,041,544	4,758,916	4,560,381

TONNAGE CLEARED.

United Kingdom and European Countries	Cargo	322,268	1,122,890	1,925,711	1,864,330	1,819,444
	Ballast	7,904	33,446	12,547	15,421	13,951
New Zealand	Cargo	427,607	373,058	596,367	789,094	542,865
	Ballast	10,776	25,230	23,157	24,254	43,140
Asiatic Countries and Islands in the Pacific	Cargo	606,409	672,306	844,879	1,123,141	1,116,430
	Ballast	34,878	43,618	30,129	52,374	27,644
Africa	Cargo	198,806	387,550	320,721	387,649	581,359
	Ballast	4,463	7,270	4,789	7,506	..
North and Central America	Cargo	332,000	235,228	224,358	294,145	345,817
	Ballast	2,976	5,791	17,068	22,673	3,488
South America	Cargo	38,216	33,709	45,237	162,974	26,759
	Ballast	..	1,330	..	541	..
Unspecified(a)	Cargo	562,150	..	..	..	..
	Ballast	26,540	..	..	..	..
	Cargo	2,487,456	2,824,741	3,957,273	4,621,333	4,432,674
	Ballast	87,537	116,685	87,690	122,769	88,223
Total .. ..	..	2,574,993	2,941,426	4,044,963	4,744,102	4,520,897

(a) For military purposes, information regarding these vessels was suppressed.

5. **Nationality of Oversea Shipping.**—(i) *General.* The greater part of the shipping visiting Australia is of British nationality, though the proportion of British tonnage in 1920-21 was very much lower than in the immediately preceding years. This was largely due to the wages troubles in the coal-mining industry in the United Kingdom. The exports of coal from Australia were, in consequence, largely increased, and the unusual practice of shipping coal from Australia to European countries was adopted, and the demand for Australian coal was the principal cause of the increased tonnage of foreign ships which were sent to carry the coal to their home countries. Japanese tonnage was active in the carriage of coal—particularly to the Netherlands Indies—and also in the transport of wool and wheat. In 1921-22 approximately 80 per cent. of the shipping entering Australian ports was British as compared with 70 per cent. in 1920-21.

Particulars of the nationality of oversea shipping for the last five years are given in the following table:—

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF VESSELS ENTERED, 1917-18 TO 1921-22.

Nationality.	Tonnage.				
	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
BRITISH—					
Australian	463,552	448,610	395,865	551,100	589,175
United Kingdom	1,211,616	1,969,441	2,553,850	2,541,310	2,802,487
Canadian .. ..	..	..	..	38,569	88,526
New Zealand	110,833	129,463	147,585	149,650	103,471
Other British	43,371	18,639	46,375	35,623	54,464
Cargo.. ..	1,506,565	1,679,659	2,096,754	2,529,089	2,568,236
Ballast	322,807	886,494	1,046,921	787,163	1,069,887
Total British	1,829,372	2,566,153	3,143,675	3,316,252	3,638,123
Per cent. on total	74.46	79.23	77.78	69.69	79.78
FOREIGN—					
Danish	20,068	8,394	9,716	24,542	28,416
Dutch	78,361	69,280	70,966	133,613	134,662
French	150,788	74,585	181,899	107,990	69,033
Italian	8,588	15,229	63,733	128,466	105,159
Japanese	126,747	164,724	307,896	505,989	218,564
Norwegian	55,246	93,890	39,760	132,647	123,218
Russian	7,179	21,916	..	..	..
Swedish	20,618	33,086	20,741	85,405	65,971
United States	154,559	174,999	192,805	273,989	139,686
Other Foreign	5,231	16,804	10,353	50,023	37,549
Cargo.. ..	494,210	540,500	497,207	707,022	540,521
Ballast	133,175	132,407	400,662	735,642	381,737
Total Foreign	627,385	672,907	897,869	1,442,664	922,258
Per cent. on total	25.54	20.77	22.22	30.31	20.22
Cargo.. ..	2,000,775	2,220,159	2,593,961	3,236,111	3,108,757
Per cent. on total	81.44	68.54	64.18	68.00	68.17
Ballast	455,982	1,018,901	1,447,583	1,522,805	1,451,624
Per cent. on total	18.56	31.46	35.82	32.00	31.83
Grand Total	2,456,757	3,239,060	4,041,544	4,758,916	4,560,381

The Australian tonnage which entered Australia from overseas during the year 1921-22 represented 12.92 per cent. of the total tonnage entered. This figure was slightly in excess of the average for the quinquennium, which was 12.85 per cent.

(ii) *Proportion of British and Foreign with Cargo.* The relative proportions of British and foreign tonnage which entered Australia with cargo during the last five years is given below. These figures may be considered to indicate more closely the proportion of the actual carrying trade done than does the total tonnage. The proportion of foreign tonnage declined materially in the earlier years of the war owing to the complete withdrawal of ships under the German and Austrian flags and to the greatly reduced tonnage of French and Norwegian ships, which were precluded from following their usual employment.

**OVERSEA SHIPPING, AUSTRALIA.—PERCENTAGE BRITISH AND FOREIGN
ENTERED WITH CARGO, 1917-18 TO 1921-22.**

Nationality.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
British	75.30	75.65	80.83	78.15	82.61
Foreign	24.70	24.35	19.17	21.85	17.39
Total	100.00	100.00	100.00	100.00	100.00

During the period under review the average annual tonnage of foreign vessels entering with cargo was 21.12 per cent.

(iii) *Principal Foreign Countries Engaged.* The following table shows the direction of the activities of the principal foreign countries engaged in the oversea carrying trade of Australia :—

OVERSEA SHIPPING, AUSTRALIA.—FOREIGN TONNAGE, 1921-22.

Countries.	Nationality.							
	Japanese.		French.		United States.		Dutch.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
EUROPEAN COUNTRIES—								
United Kingdom ..	..	4,260	4,539	7,957	..	3,552	..	2,209
France .. ..	..	..	18,540	13,612	..	..	..	..
Other European Countries	..	..	4,410	4,539	..	..	42,273	64,191
NEW ZEALAND ..	..	..	..	..	2,351	7,184	..	..
ASIATIC COUNTRIES AND IS-								
LANDS IN THE PACIFIC—								
Dutch East Indies ..	18,401	22,864	4,414	4,420	..	3,066	66,478	15,089
Japan	159,527	163,841	..	..	..	..	..	..
New Caledonia ..	..	..	29,185	28,362	..	..	..	..
Other Pacific Islands ..	..	..	5,400	7,200	2,996	5,202	229	23
Straits Settlements ..	7,975	7,282	2,545	..	..	..	23,428	33,343
Other Asiatic Countries	16,339	9,537	..	2,545	2,701	6,849	2,254	..
AFRICAN COUNTRIES ..	1,790	10,626	..	..	2,565	7,099	..	14,102
NORTH AMERICAN COUN-								
TRIES—								
United States ..	11,165	..	..	..	129,073	117,654	..	..
Canada	3,367	..	..	..	..	..	..	..
SOUTH AMERICAN COUN-								
TRIES—								
Peru .. ..	..	..	..	..	..	5,115	..	..
With Cargo ..	99,760	218,410	52,765	68,635	130,170	150,507	80,395	126,621
In Ballast ..	118,804	..	16,268	..	9,516	5,214	54,267	2,336
Total	218,564	218,410	69,033	68,635	139,686	155,721	134,662	128,957

Most of the foreign tonnage entered is employed between its home ports or the colonies of its own country and Australia, *e.g.*, French shipping is engaged chiefly between Australia, France and New Caledonia, while Dutch ships are employed almost entirely between Australia and the Netherlands or the Netherlands East Indies. Norwegian shipping is always an exception to this rule. The greater portion of Norwegian tonnage engaged in trade with Australia is composed of vessels operating under charters. Of the 123,218 tons of Norwegian shipping which entered Australia during 1921-22, 63,647 tons (51.65 per cent.) were in ballast.

The greater portion of Japanese tonnage entering during the year was in ballast. These vessels lifted cargoes consisting chiefly of coal, wool, and wheat.

(iv) *Nationality of Steam and Sailing Tonnage.* A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality which entered Australia during the years 1917-18 to 1921-22.

OVERSEA SHIPPING, AUSTRALIA.—NATIONALITY OF STEAM AND SAILING VESSELS ENTERED, 1917-18 TO 1921-22.

Description and Nationality of Vessels.	1917-18.		1918-19.		1919-20.		1920-21.		1921-22.	
	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.	Ton-nage.	Per-centage.
Steam—										
British ..	1,739,936	82	2,487,868	86	3,102,345	81	3,232,463	73	3,597,388	81
Foreign ..	387,058	18	419,704	14	740,390	19	1,190,417	27	869,267	19
Total Steam	2,126,994	100 (87)	2,907,572	100 (90)	3,842,735	100 (95)	4,422,880	100 (93)	4,466,655	100 (98)
Sailing—										
British ..	89,436	27	78,285	24	41,330	21	83,789	25	40,735	43
Foreign ..	240,327	73	253,203	76	157,479	79	252,247	75	52,991	57
Total Sailing	329,763	100 (13)	331,488	100 (10)	198,809	100 (5)	336,036	100 (7)	93,726	100 (2)
Steam and Sailing—										
British ..	1,829,372	74	2,566,153	79	3,143,675	78	3,316,252	70	3,638,123	80
Foreign ..	627,385	26	672,907	21	897,869	22	1,442,664	30	922,258	20
Total ..	2,456,757	100	3,239,060	100	4,041,544	100	4,758,916	100	4,560,381	100

6. *Tonnage in Ballast.*—(i) *Total and Percentage by Nationality.* The following table shows the tonnage according to nationality of oversea vessels which entered and cleared Australia in ballast during the years 1917-18 to 1921-22 :—

OVERSEA SHIPPING, AUSTRALIA.—TONNAGE IN BALLAST, 1917-18 TO 1921-22.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
TOTAL TONNAGE.						
1917-18 ..	322,807	133,175	455,982	68,021	19,516	87,537
1918-19 ..	886,494	132,407	1,018,901	93,671	23,014	116,685
1919-20 ..	1,046,921	400,662	1,447,583	60,021	27,669	87,690
1920-21 ..	787,163	735,642	1,522,805	75,356	47,413	122,769
1921-22 ..	1,069,887	381,737	1,451,624	79,377	8,846	88,223
PERCENTAGE.						
1917-18 ..	17.65	21.23	18.56	3.49	3.11	3.40
1918-19 ..	34.55	19.68	31.46	4.05	3.65	3.97
1919-20 ..	33.30	44.62	35.82	1.90	3.12	2.17
1920-21 ..	23.74	50.99	32.00	2.27	3.32	2.59
1921-22 ..	29.41	41.39	31.83	2.22	0.93	1.95

(ii) *Tonnage entered in Ballast—States.* The tonnage which entered each State in ballast during 1921–22 was as follows:—

OVERSEA TONNAGE IN BALLAST ENTERING STATES, 1921–22.

State.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Tonnage ..	585,248	164,854	46,877	172,725	476,742	5,155	23	1,451,624
Percentage on total ..	40.32	11.36	3.23	11.90	32.84	0.35	..	100.00

In normal times the large exports of coal from New South Wales afford special inducements to vessels in search of freights. The tonnage in ballast into New South Wales is mainly for coal cargo, into Victoria for wheat, into South Australia for wheat and ore, and into Western Australia for timber and wheat.

§ 3. Shipping of Ports.

1. *Tonnage Entered.*—Appended is an abstract of the total shipping tonnage—oversea, interstate, and coastwise—which entered the more important ports of Australia during the year 1921–22, together with similar information in regard to some of the ports of New Zealand for the year 1921 and of Great Britain for the year 1920:—

SHIPPING OF PORTS, AUSTRALIA, NEW ZEALAND, AND THE UNITED KINGDOM.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	7,541,361	London	16,519,347
Melbourne	5,608,013	Liverpool (inc. Birkenhead)	12,778,674
Newcastle	4,567,632	Cardiff	9,631,849
Adelaide(a)	3,040,229	Tyne Ports	8,391,340
Fremantle	2,528,464	Southampton	4,895,070
Brisbane	2,215,273	Hull	3,553,588
Townsville	943,665	Newport	3,132,050
Albany	710,487	Plymouth	2,975,130
Mackay	549,628	Bristol	2,728,453
Hobart	542,746	Middlesbrough	2,430,769
Rockhampton	479,614	Manchester (inc. Runcorn)	2,280,579
Pirie	474,411	Swansea	2,218,281
Cairns	433,340	Sunderland	1,891,498
Bunbury	425,568	Dartmouth	1,553,350
Bowen	392,862	Cowes	1,304,428
Burnie	382,275	Blyth	1,253,001
Geelong	379,422	Port Talbot	1,109,881
Launceston	318,823	Falmouth	818,718
Devonport	316,342	SCOTLAND—	
Thursday Island	276,099	Glasgow	4,533,191
Wallaroo	222,595	Leith	1,186,209
NEW ZEALAND—		IRELAND—	
Wellington	2,697,751	Belfast	3,026,518
Auckland	1,771,496	Dublin	2,728,031
Lyttleton	1,516,021	Cork (inc. Queenstown) ..	1,305,349
Dunedin	629,119		

(a) Exclusive of coastal shipping, particulars of which are not available.

§ 4. Vessels Built and Registered.

1. **Vessels Built.**—The following tables show the number and tonnage of vessels built in Australia during each of the calendar years 1918 to 1922, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, does not, however, make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers are the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

VESSELS BUILT IN AUSTRALIA, 1918 TO 1922.

NUMBER.

Year.	Steamers built of—					Oil Motor Vessels.	Sailing.	Total.
	Wood.	Iron.	Steel.	Com- posite.	Total.			
1918	2	..	..	..	2	4	..	6
1919	2	..	3	..	5	4	8	17
1920	6	..	8	1	15	4	9	28
1921	2	..	5	..	7	5	3	15
1922	4	..	4	..	8	5	4	17

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1918	378	201	456	357	..	..	..	..	834	558
1919	10,829	6,626	64	55	1,010	864	..	..	11,903	7,545
1920	30,851	17,834	65	57	540	407	..	..	31,456	18,298
1921	14,129	8,044	50	42	27	23	..	..	14,206	8,109
1922	5,887	3,171	169	127	262	209	..	..	6,318	3,507

2. **Vessels Registered.**—The following table shows the number and net tonnage of steam, sailing, and other vessels on the registers of the States and of the Northern Territory on the 31st December, 1922 :—

VESSELS ON THE STATE REGISTERS, 31st DECEMBER, 1922.

State.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.
New South Wales ..	48	1,396	561	143,672	116	1,877	248	16,048	45	9,915	1,018	172,908
Victoria	23	2,815	160	139,198	31	1,215	68	4,670	63	27,386	350	175,284
Queensland	21	3,352	65	24,898	26	306	118	2,060	30	4,109	260	34,725
South Australia ..	13	608	87	43,843	24	1,126	60	2,251	50	8,510	234	56,338
Western Australia ..	10	191	31	18,133	12	205	331	4,921	26	8,339	410	31,789
Tasmania	6	478	57	14,332	51	1,292	71	3,001	2	563	187	19,666
Northern Territory ..	..	..	..	..	1	17	27	328	..	..	28	345
Total	121	8,840	961	384,076	261	6,038	923	33,279	221	58,822	2,487	491,055

§ 5. Interstate Shipping.

1. **System of Record.**—*Interstate Shipping* comprises two elements, viz.:—(a) Vessels engaged solely in interstate trade: and (b) Vessels trading between Australia and overseas countries and in the course of their voyage proceeding from one State to another. (It should be mentioned that these vessels, except under special circumstances, do not now engage in interstate carrying.)

No complexity enters into the record of those in category (a), but with regard to the method of recording the movements of the overseas vessels (b) some explanation is necessary. Each State desires that its shipping statistics (which are prepared in the Commonwealth Bureau of Census and Statistics) shall show in full its shipping communication with overseas countries, but at the same time it is necessary to avoid any duplication in the statistics for Australia as a whole. In order to meet these dual requirements, a vessel arriving in any State from an overseas country—say United Kingdom—*via* another State, is recorded in the second State as from United Kingdom, *via* States, thus distinguishing the movement from a *direct* overseas entry. Continuing the voyage, the vessel is in the third State again recorded for the statistics of the State concerned as from United Kingdom *via* other States. As, however, this inward voyage will terminate at an Australian port it follows that the *clearance* from the second State to the third State is a *clearance* interstate, and is included with interstate tonnage in conformity with the pre-federation practice of the States, and to preserve the continuity of State statistics. Thus, movements of ships which are, from the standpoint of Australia as a whole, purely coastal movements, must for the individual States be recorded as “Overseas *via* other States” or “Interstate” according to the direction of the movement. The significance of the record of these movements will be more clearly seen from the following tabular presentation of the inward and outward voyages to and from Australia of a mail steamer which, it is presumed, reaches Fremantle (Western Australia) and then proceeds to the terminal port of the voyage—Sydney (New South Wales)—*via* the States of South Australia and Victoria. From the terminal port the vessel will commence the outward voyage, and retrace its inward track.

ITINERARY OF AN OVERSEA VESSEL ON AUSTRALIAN COAST.

Particulars.	Recorded as—	
	For the State and for Australia.	For the States.
Inward Voyage—		
Enters Fremantle from United Kingdom	Overseas direct	
Clears Fremantle for Adelaide .. ..	.. ..	Interstate direct
Enters Adelaide from United Kingdom		
<i>via</i> Fremantle .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Clears Adelaide for Melbourne .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Enters Melbourne from United Kingdom		
<i>via</i> Adelaide .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Clears Melbourne for Sydney .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Enters Sydney from United Kingdom		
<i>via</i> Melbourne .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Outward Voyage—		
Clears Sydney for United Kingdom <i>via</i>		
Melbourne .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Enters Melbourne from Sydney .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Clears Adelaide for United Kingdom <i>via</i>		
Adelaide .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Enters Adelaide from Melbourne .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Clears Adelaide for Fremantle .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Enters Fremantle from Adelaide .. ..	.. ..	Interstate direct .. Overseas <i>via</i> States
Clears Fremantle for United Kingdom ..	Overseas direct	

From the method outlined above, the requirements for Australia and for the individual States are ascertained as follows:—(a) The aggregate of all ships recorded for each State

as "Oversea direct" gives the overseas shipping for Australia as a whole. (b) The aggregate for all ships recorded in any State as "Oversea direct" plus those recorded as "Oversea via States" gives the total overseas shipping for that State. (c) From the example given in the table it may be noticed that for every entry "Oversea via States" there is a corresponding clearance "Interstate," so that according to the purpose for which the figures are required, the movements of "oversea ships via States" can be added to the recorded interstate shipping, and thus furnish figures showing the total interstate movement of shipping, or a similar deduction may be made from the recorded interstate shipping to give the total movement of shipping engaged solely in interstate trade.

2. Vessels and Tonnage Entered.—The following table gives the number and tonnage of vessels recorded as having entered each State from any other State during each of the years 1917-18 to 1921-22. The shipping on the Murray River, between the States of New South Wales, Victoria, and South Australia is not included.

**INTERSTATE SHIPPING.—NUMBER AND TONNAGE OF VESSELS ENTERED,
1917-18 TO 1921-22.**

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
NUMBER.					
New South Wales ..	1,469	1,461	1,226	1,650	1,748
Victoria ..	1,335	1,239	1,269	1,614	1,797
Queensland ..	524	529	406	469	459
South Australia ..	429	445	456	603	724
Western Australia ..	144	309	367	431	484
Tasmania ..	761	727	787	987	1,072
Northern Territory ..	29	28	21	18	19
Total ..	4,691	4,738	4,532	5,772	6,303

TONNAGE.

New South Wales ..	2,502,174	2,291,462	2,451,644	3,297,358	3,614,744
Victoria ..	1,665,921	1,393,549	2,017,798	2,434,778	3,091,313
Queensland ..	768,769	700,617	635,809	770,233	857,715
South Australia ..	796,627	707,248	1,215,970	1,554,649	1,949,071
Western Australia ..	475,840	944,088	1,364,866	1,600,142	1,817,361
Tasmania ..	432,208	442,457	441,660	592,852	937,296
Northern Territory ..	61,464	53,607	34,251	36,269	52,814
Total ..	6,703,003	6,533,028	8,161,998	10,286,281	12,320,314

3. Oversea Vessels Moving Interstate.—From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1921-22, including the total interstate movements of overseas vessels, the figures in

the following table, which give the number and tonnage of vessels entered from or cleared for overseas countries *via* other Australian States, must be added to those in the table preceding :—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER AUSTRALIAN STATES, 1921-22.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ..	484	2,036,462	479	1,911,288	963	3,947,750
Victoria ..	431	1,777,215	441	1,724,531	872	3,501,746
Queensland ..	144	787,672	184	926,447	328	1,714,119
South Australia ..	231	991,799	241	1,005,194	472	1,996,993
Western Australia ..	5	17,650	15	53,832	20	71,482
Tasmania ..	27	113,227	46	234,023	73	347,250
Northern Territory ..	..	..	..	..	..	..
Total ..	1,322	5,724,025	1,406	5,855,315	2,728	11,579,340

Oversea vessels moving interstate are with few exceptions not engaged in the active interstate trade of Australia but are merely proceeding to the several States in continuation of their overseas voyage.

4. **Vessels engaged Solely in Interstate Trade.**—Reverting to the explanation given in the first paragraph it may be assumed that vessels *entered* in the several States as from “Oversea countries *via* other States” have really been *cleared* from other States as “Interstate,” and further, that the vessels *cleared* to “Oversea countries *via* other States” have likewise been *entered* as “Interstate”. If, on this assumption, all such vessels are excluded, the remainder will represent vessels engaged in the interstate trade only. Applying this suggestion, and so eliminating all interstate movements of overseas vessels, the number and tonnage movement of vessels engaged solely in the interstate trade for Australia as a whole during the years 1917-18 to 1921-22 were as follows :—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1917-18 TO 1921-22.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1917-18	4,171	4,856,751	4,152	4,765,957
1918-19	4,093	4,357,115	4,074	4,377,666
1919-20	3,482	3,939,055	3,510	3,986,345
1920-21	4,539	5,406,967	4,566	5,433,856
1921-22	4,897	6,464,999	4,885	6,335,396

5. **Total Interstate Movement of Shipping.**—(i) *Australia.* The appended table shows the total inward interstate movement of shipping for each of the years 1917-18 to 1921-22 :—

TOTAL INWARD INTERSTATE MOVEMENT OF SHIPPING, 1917-18 TO 1921-22.

Vessels.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate	4,202,179	5,219,515	8,741,260	10,001,668	11,579,340
Vessels solely interstate ..	4,856,751	4,357,115	3,939,055	5,406,967	6,464,999
Total	9,058,930	9,576,630	12,680,315	15,408,635	18,044,339

(ii) *States.* The following table shows the number and tonnage of vessels which entered and cleared each State during 1921-22, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1921-22.

State.	Entered.		Cleared.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,232	5,651,206	2,185	5,390,160
Victoria	2,228	4,868,528	2,323	5,169,720
Queensland	603	1,645,387	630	1,712,992
South Australia	955	2,940,870	992	3,122,964
Western Australia	489	1,835,011	384	1,467,564
Tasmania	1,099	1,050,523	1,083	1,005,854
Northern Territory	19	52,814	16	45,482
Total Australia	7,625	18,044,339	7,613	17,914,736

6. *Interstate and Coastal Services.*—The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1918 to 1922 :—

AUSTRALIAN INTERSTATE AND COASTAL STEAMSHIP SERVICES, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Number of companies making returns	23	23	23	(a)39	32
Number of steamships	142	143	154	183	195
Tonnage .. { Gross	208,700	250,610	280,609	317,019	357,652
{ Net	126,444	143,143	159,293	179,393	204,219
Horse-power (Nominal)	25,073	27,841	29,557	32,801	34,886
Number of passengers { 1st class	4,674	5,229	5,250	4,226	4,647
{ 2nd class and steer-licensed	4,325	5,524	5,632	4,642	5,016
Complement of Crew { Masters and officers	480	493	537	571	667
{ Engineers	378	409	464	551	607
{ Crew	3,365	3,671	4,502	4,613	5,175

(a) In this year a number of small organizations were included for the first time.

§ 6. Tonnage of Cargo.

The following table shows the aggregate tonnage of oversea cargo discharged and shipped in Australian ports, and, also, the tonnage of interstate cargo shipped in all ports for the years 1917-18 to 1921-22 :—

AUSTRALIAN SHIPPING—CARGO MOVEMENT, 1917-18 TO 1921-22.

Year.	Oversea Cargo.		Interstate Cargo.
	Discharged.	Shipped.	Shipped.
	Tons.	Tons.	Tons.
1917-18	2,012,387	2,613,561	4,833,428
1918-19	2,312,288	3,813,651	4,495,258
1919-20	2,238,298	4,984,946	4,415,909
1920-21	3,201,215	5,925,133	4,993,678
1921-22	2,419,977	5,816,174	5,533,716

In the foregoing table cargo which was recorded in cubic feet has been converted to weight on the basis of 40 cubic feet to the ton.

§ 7. Commonwealth Government Shipping Activities.

1. **Local Building Programme.**—The original Commonwealth Government programme of ship construction in Australia provided for 48 vessels, 24 of which were to be wooden sailing vessels, and the remainder steel cargo ships. Owing to certain variations, the programme resulted in the building of 21 steel cargo vessels and 2 five-masted schooners with auxiliary power.

The appended table shows, in respect of each steam vessel, the yard where built, builder's name, deadweight capacity, and date of launching up to 31st December, 1922 :—

COMMONWEALTH GOVERNMENT STEAMSHIPS BUILT IN AUSTRALIA, 31st DECEMBER, 1922.

Name of Vessel.	Yard where built.	By whom.	Registered Tonnage.		Date of Launching.
			Gross.	Net.	

“ D ” CLASS—(DEADWEIGHT CAPACITY APPROX. 5,608 CUBIC FEET).

<i>Delungra</i>	..	Walsh Island	..	New South Wales Government	3,346	1,934	25.3.19
<i>Dromana</i>	..	Williamstown	..	Commonwealth Ship Construction Branch	3,350	1,934	11.4.19
<i>Dundula</i>	..	Cockatoo Island	..	Commonwealth Navy Department	3,344	1,936	9.7.19
<i>Dinoga</i>	..	Walsh Island	..	New South Wales Government	3,341	1,939	17.10.19
<i>Dilga</i>	..	Walsh Island	..	New South Wales Government	3,308	1,949	15.11.19
<i>Dumosa</i>	..	Williamstown	..	Commonwealth Ship Construction Branch	3,351	1,941	25.11.19

“ E ” CLASS—(DEADWEIGHT CAPACITY APPROX. 6,170 CUBIC FEET).

<i>Eudunda</i>	..	Cockatoo Island	..	Commonwealth Navy Department	3,352	1,922	29.3.20
<i>Eurelia</i>	..	Walsh Island	..	New South Wales Government	3,351	1,921	10.4.20
<i>Enoggera</i>	..	Walsh Island	..	New South Wales Government	3,359	1,922	25.6.20
<i>Emita</i>	..	Williamstown	..	Commonwealth Ship Construction Branch	3,347	1,919	1.7.20
<i>Erriba</i>	..	Williamstown	..	Commonwealth Ship Construction Branch	3,345	1,919	10.12.20
<i>Eromanga</i>	..	Walsh Island	..	New South Wales Government	3,359	1,922	12.3.21
<i>Eurimbla</i>	..	Adelaide	..	Messrs. Poole and Steele	3,351	1,916	20.4.21
<i>Echuca</i>	..	Maryborough	..	Walkers Limited	3,362	1,924	6.7.21
<i>Echunga</i>	..	Maryborough	..	Walkers Limited	3,362	1,923	14.12.21
<i>Euwarra</i>	..	Adelaide	..	Messrs. Poole and Steele	3,349	1,907	17.12.21
<i>Euroa</i>	..	Williamstown	..	Commonwealth Ship Construction Branch	a3,353	a1,921	27.1.22
<i>Elouera</i>	..	Williamstown	..	Commonwealth Ship Construction Branch	a3,353	a1,921	2.3.22
<i>Erina</i>	..	Adelaide	..	Messrs. Poole and Steele	3,350	1,916	4.11.22

(a) Approximate.

Two vessels are in course of construction by the Commonwealth Ship Construction Branch at Cockatoo Island. These are of much greater dimensions than the vessels referred to above, being 520 feet in length, of approximately 9,700 gross and 5,800 net registered tonnage, a deadweight capacity of 12,800 cubic feet, with 170,000 cubic feet of insulated space and having a speed at sea of 13 knots. The first of these vessels (s.s. “*Fordsdale*”) launched on 21st June, 1923, will probably be placed in commission about the end of 1923. It is anticipated that the other vessel (s.s. “*Ferndale*”) will be launched about April, 1924.

2. **Vessels Built in the United Kingdom.**—In addition to the vessels referred to above, the following steamers were constructed in yards in the United Kingdom :—

**COMMONWEALTH GOVERNMENT STEAMSHIPS BUILT IN UNITED KINGDOM,
31st DECEMBER, 1922.**

Name of Vessel.	Yard where built.	By whom.	Registered Tonnage.		Date of handing over to C'wealth Government Line.
			Gross.	Net.	

“ BAY LINERS ”—(DEADWEIGHT CAPACITY APPROX. 12,590 CUBIC FEET).

<i>Moreton Bay</i>	..	Barrow	Vickers Limited	13,850	8,447	13.11.21
<i>Largs Bay</i>	..	Glasgow	W. Beardmore and Co. Ltd.	13,851	8,457	23.12.21
<i>Hobsons Bay</i>	..	Barrow	Vickers Limited	13,837	8,440	17.2.22
<i>Esperance Bay</i>	..	Glasgow	W. Beardmore and Co. Ltd.	13,851	8,457	14.7.22
<i>Jervis Bay</i>	..	Barrow	Vickers Limited	13,837	8,440	11.9.22

These vessels have an approximate length of 520 feet by 68 feet beam, and a capacity of 900,000 cubic feet of which 370,000 cubic feet are insulated.

Each of the above vessels has already made trips to and from Australia.

3. **Commonwealth Government Line of Steamers.**—(i) *Number and Capacity.* The number and tonnage of the fleet operated by the management of the Commonwealth Government Line of Steamers as at the end of June, 1923, was as follows :—

COMMONWEALTH GOVERNMENT STEAMSHIPS, 1923.

Particulars.	Number.	Tonnage.	
		Gross.	Net.
		Tons.	Tons.
Vessels owned by Commonwealth Government ..	33	174,084	105,732
Ex-enemy vessels operated	17	79,792	49,570
Total	50	253,876	155,302
Not yet in Commission	4	26,106	15,442
Grand Total	54	279,932	170,744

(ii) *Profit on Working.* From its inception in October, 1916, to the 30th June, 1921, the Line has made a profit as follows :—From 16th October, 1916, to 30th June, 1918, £903,500 ; from 1st July, 1918, to 30th June, 1919, £1,160,034 ; from 1st July, 1919, to 30th June, 1920, £137,959 ; from 1st July, 1920, to 30th June, 1921, £102,949 ; total £2,304,442. Particulars for the years 1921–22 and 1922–23 are not at present available.

§ 8. World's Shipping Tonnage.

The table hereunder shows the number and gross tonnage of steam and motor, and sailing vessels owned by several of the most important maritime countries of the world, together with the proportion of the grand total owned by each country :—

WORLD'S SHIPPING TONNAGE, 1922-23.

Nationality.	Steam and Motor.		Sailing.		Total.		Percentage on Total.	
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.
United Kingdom	8,430	19,088,638	419	206,999	8,849	19,295,637	26.52	31.14
Australia and New Zealand	595	747,214	41	18,824	636	766,038	1.91	1.24
Canada (a) ..	557	894,318	320	126,666	877	1,020,984	2.63	1.65
Other British ..	609	714,769	278	75,022	887	789,791	2.66	1.27
Total, British Empire ..	10,191	21,444,939	1,058	427,511	11,249	21,872,450	33.72	35.30
Belgium ..	270	571,074	5	8,403	275	579,477	0.82	0.93
Denmark ..	622	963,142	200	74,996	822	1,038,138	2.46	1.68
France ..	1,723	3,537,382	371	308,410	2,094	3,845,792	6.28	6.21
Germany ..	1,533	1,785,767	190	101,641	1,723	1,887,408	5.16	3.05
Greece ..	361	657,604	18	10,523	379	668,127	1.14	1.08
Holland ..	1,100	2,617,485	64	15,228	1,164	2,632,713	3.49	4.25
Italy ..	1,016	2,698,722	397	167,613	1,413	2,866,335	4.23	4.63
Japan ..	2,026	3,586,918	..	..	2,026	3,586,918	6.07	5.79
Norway ..	1,716	2,417,680	136	183,181	1,852	2,600,861	5.55	4.20
Spain ..	780	1,215,276	193	67,481	973	1,282,757	2.92	2.07
Sweden ..	1,122	1,040,032	223	75,343	1,345	1,115,375	4.03	1.80
United States of America (b) ..	3,862	13,652,558	1,123	1,162,212	4,985	14,814,770	14.94	23.91
Other Foreign Countries ..	2,392	2,828,399	676	333,506	3,068	3,161,905	9.19	5.10
Total, Foreign Countries ..	18,523	37,572,039	3,596	2,508,537	22,119	40,080,576	66.28	64.70
Grand Total..	28,714	59,016,978	4,654	2,936,048	33,368	61,953,026	100.00	100.00

(a) Sea-going.

(b) Includes Philippine Islands.

It should be mentioned that the foregoing figures have been compiled from Lloyd's Register of Shipping, and only vessels of 100 tons or upwards have been included.

§ 9. Ferries.

1. **General.**—In previous issues of the Year Book particulars of ferries were included in the sub-section dealing with tramways, as the ferries are mainly a supplementary means of transport to the suburban railway and tramway systems.

2. **New South Wales.**—The ferry services in Port Jackson are under the control of two companies which, during the year 1922 had 62 vessels in commission, 60 of which were double-ended screw steamers, the remaining two being motor driven. It is claimed for the steamers that they are superior in size and equipment to boats employed on similar service in any other part of the world.

3. **Victoria.**—The Williamstown City Council owns one steamer which is engaged in the transport of passengers between Port Melbourne and Williamstown. There are several other steamers which are engaged during the summer season in the carriage of passengers and goods to the several seaside resorts. Particulars of these services, however, are not included in the table on the next page.

4. **Queensland.**—The Brisbane City Council and the Balmoral Shire Council control the ferry services in the Metropolitan area. During the year 1922, 13 vessels were employed, 5 of which were steam-propelled.

5. **Western Australia.**—The ferries plying on the Swan River during 1922 were operated by a private company, and consisted of 9 petrol-driven vessels. At South Perth the Western Australian Government employed 4 vessels, 2 of which were steamers.

6. **Tasmania.**—In and around Hobart there were in 1922 3 ferry services, 2 being controlled by private companies which had 6 steamers in commission, and 1 by the Public Works Department, with 2 motor-propelled vessels.

7. **Particulars of Working.**—The subjoined table shows for the year 1922 so far as returns are available the most important items in connexion with the operation of the ferry services in the several States :—

FERRIES.—PARTICULARS OF WORKING, 1922.

Particulars.	New South Wales.	Victoria.	Queensland.	Western Australia.	Tasmania.	Total.
Boats in Service—						
Steam .. No.	60	1	5	2	6	74
Other .. No.	2	..	8	11	2	23
Total .. No.	62	1	13	13	8	97
Number of passengers which boats are licensed to carry .. No.	40,438	380	845	1,802	1,880	45,345
Revenue .. £	622,038	6,051	13,444	18,099	21,351	680,983
Working Expenses .. £	558,427	8,931	27,055	18,328	21,544	634,285
Passengers carried (b) No.	37,953,290	203,000	3,564,000	1,232,098	924,018	43,876,406
Mileage of Boats miles	(a)186,195	(b)2,000	(b)35,000	82,917	58,375	(a)365,487
Accidents—						
Killed .. No.	..	..	..	1	..	1
Injured .. No.	77	..	..	..	..	77
Employees—						
Salaried Staff No.	34	..	4	2	8	48
Wages Staff No.	998	5	38	28	42	1,111

(a) Incomplete.

(b) Approximate.

8. **Other Services.**—In addition to the foregoing there are throughout the several States a number of row-boat ferry services, and on many of the principal inland rivers punts are in operation.

§ 10. Miscellaneous.

1. **Lighthouses.**—Transport and Communication Bulletin No. 14, published by this Bureau, contains a list of the principal lighthouses on the coast of Australia, giving details of the location, number, colour, character, period, candle-power, and visibility of each light so far as particulars are available.

2. **Distances by Sea.**—A statement giving the distances by sea between the ports of the capital cities of Australia and the most important ports in other countries which trade with Australia has also been included in the Transport and Communication Bulletin No. 14.

3. **Shipping Freight Rates.**—The Quarterly Summary of Australian Statistics gives a list of the ruling freight rates for general merchandise both in respect of oversea and interstate shipments. The latest figures available give the rates current at 30th June, 1923.

B. RAILWAYS.

§ 1. General.

1. **Introduction.**—In the issues of the Official Year Book, Nos. 1 to 7, the statistics of all Government railway systems were treated under the head of *Government Railways*. In the following issues, Nos. 8 to 15, the greater part of the statistics relating to State-owned lines was dealt with separately from those under the control of the Commonwealth Government. This arrangement is continued in the present issue. The State railways are referred to throughout as “State” and the Commonwealth railways as “Federal” railways. There is, however, a summary of the working of the Federal and States railways in § 4 of this section.

In all tables relating to Government Railways, the particulars quoted, except where otherwise stated, are for the financial years.

2. **Improvement of Railway Statistics.**—Some of the earlier issues of the Year Book contain a condensation of the report issued in 1909 by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia* (see Year Book No. 7, page 598).

In accordance with the decision of the Conference of Railways Commissioners, held in Sydney on the 17th May, 1921, in regard to the desirability of attaining uniformity in the methods of accounting in the several Railways Departments of Australia, representative officials from the accountancy staffs met in conference in Melbourne on 31st May, 1921, and formulated a scheme for the uniform classification of earnings and working expenses, and the mode of presentation of financial and certain other tables in the Commissioners' Annual Reports.

The Australian Bureau of Railway Statistics was established in Sydney almost entirely at the expense of the New South Wales and Victorian Railways, but each of the other States has undertaken to supply all available information.

Bulletins giving details of revenue, operating costs, etc., are published quarterly.

3. **Railway Communication in Australia.**—(i) *General.* An account of the progress of railway construction in Australia since the opening of the first line in 1854 will be found in Year Book No. 6, p. 681. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral, and mining districts towards the principal ports, which are themselves connected by systems of lines running approximately parallel to the coast. In the east, lines radiating from Cairns, Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are four main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports, meeting the main line from Melbourne on the border of South Australia and Victoria near Serviceton. The South Australian and Victorian railway systems also meet on the border at two other points, one near Pinnaroo, and the other at Rennick, near Mount Gambier.

In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts, while there are also two short lines, one on the north-west, the other on the south coast, which are unconnected with the main system. In the northern parts of Queensland and in the Northern Territory there are also several disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

By the opening, in 1917, of the Trans-Australian railway from Port Augusta to Kalgoorlie, through communication by rail was established between the eastern States and the Western Australian railway system.

(ii) *The Main Interstate Lines.* The main interstate lines, which permit of direct communication between the five capital cities—Brisbane, Sydney, Melbourne, Adelaide, and Perth—cover a distance from end to end of 3,474.80 miles or 3,479.82 miles via Newcastle. The scheduled time for the journey from Brisbane to Perth is six days

one hour forty-two minutes, and from Perth to Brisbane five days twenty-one hours forty minutes, the time in each case being taken over all.

The time allowed for the journey from Port Augusta to Kalgoorlie, a distance of 1,051.45 miles, is 37 hours 13 minutes (actual), giving an average speed of 28.25 miles per hour throughout, inclusive of stoppages. Exclusive of stoppages, which aggregate slightly under three hours, the average speed is approximately 30 miles per hour. In the opposite direction the gross time is 38 hours 45 minutes (actual), which gives an average speed of 27.13 miles per hour. Exclusive of stoppages, which aggregate about 3 hours 10 minutes, the average speed is about 29.55 miles per hour.

The average speed inclusive of all stops on the journey from Brisbane to Perth is 23.88 miles per hour, and from Perth to Brisbane 21.00 miles per hour.

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Yaraka in Queensland to Meekatharra in Western Australia, a total distance of 4,809.14 miles.

4. Non-conformity of Gauge.—(i) *General.* With but few exceptions, all the railway lines in Australia open for general traffic are now owned and managed by the respective States in whose territory they run, or by the Commonwealth Government; but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. A statement giving the reasons for the adoption of the various gauges in the several States appeared in Year Book No. 15, p. 534, but considerations of space preclude its repetition in the present issue.

(ii) *Interstate Junctions.* Connexions at border stations were established as follows :—Victoria and New South Wales, at Albury, 14th June, 1883; Victoria and South Australia, at Serviceton, 19th January, 1887; and New South Wales and Queensland, at Wallangarra, 16th January, 1888. Through trains were unable to run on this latter section until the completion of the Hawkesbury River Bridge on 1st May, 1889. On the 22nd October, 1917, through communication from East to West was made possible by the opening of the Trans-Australian line.

(iii) *Proposals for Unification.* The question of the unification of gauges in the several States has been under consideration for several years, and numerous conferences on the subject have been held from time to time between the several Railways Commissioners and between the Premiers of the States concerned. Reference to these conferences have been made in previous issues of the Year Book.

(iv) *Estimated Cost of Unification of Gauges.* The scheme advocated by the Royal Commission of 8th February, 1921, and adopted by the Prime Minister and Premiers of the several States in conference during November of the same year, as the first step will provide a standard 4-ft. 8½-in. gauge railway between Brisbane and Fremantle, and the conversion of the whole of the broad-gauge lines of Victoria and South Australia, at an estimated cost of £21,600,000, spread over a period of approximately eight years. The details of the estimate of £21,600,000, which provides for a main trunk line between Fremantle and Brisbane, and the conversion of the 5-ft. 3-in. gauge lines in Victoria and South Australia are as given in the subjoined table, together with the quota from each State and the Commonwealth Government in terms of the allocation of cost agreed upon :—

COST OF UNIFICATION OF RAILWAY GAUGES.

State.	Alterations to existing railways and structures.	New Lines necessary.	Adjustments of Rolling Stock.	Total cost of work within the State.	Quota.
	£	£	£	£	£
New South Wales ..	800,000	857,000	..	1,657,000	7,094,388
Victoria ..	5,246,000	..	3,078,000	8,324,000	4,939,349
Queensland ..	..	1,250,000	598,000	1,848,000	2,535,868
South Australia ..	1,706,000	1,646,000	1,322,000	4,674,000	1,632,292
Western Australia ..	1,260,000	3,120,000	650,000	5,030,000	1,078,103
Commonwealth ..	..	..	67,000	67,000	4,320,000
Total ..	9,012,000	6,873,000	5,715,000	21,600,000	21,600,000

The estimated cost of converting the whole of the lines in the States concerned is approximately £57,200,000.

5. **Rolling Stock Gauges.**—Allied to the question of the gauges of the railways of Australia is that of the rolling stock gauges in use, the rolling stock gauge being the maximum transverse dimensions to which the rolling stock may be constructed. The following table gives particulars of the present rolling stock gauges, together with the maximum lengths and weights of vehicles:—

RAILWAYS, STATE AND FEDERAL.—ROLLING STOCK GAUGES, 1921-22.

PASSENGER ROLLING STOCK.

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.		Length over all.	Maximum Tare.
		Width.	Height above Rail Level.		
	ft. in.	ft. in.	ft. in.	ft. in.	t. c. q.
New South Wales	4 8½	10 6	14 0	74 4½	44 2 1
Victoria	5 3	10 0	14 0	74 1¼	47 16 0
"	2 6	7 0¼	10 4¼	31 8	8 11 0
Queensland	3 6	9 4	12 9	55 5	26 17 0
"	2 0	6 3⅞	10 0	22 0	3 0 0
South Australia	5 3	10 4¼	14 1¾	74 1¼	40 11 0
"	3 6	9 4⅝	12 1	62 6	24 18 0
Western Australia	3 6	8 10	12 7	61 9	31 10 0
Tasmania	3 6	9 6	12 5	64 0	30 0 0
"	2 0	6 6	10 0	30 2	5 10 1
Federal—					
Trans-Australian	4 8½	10 6	14 6	78 11½	48 0 0
Northern Territory	3 6	9 4	12 9	39 0	12 0 0
Oodnadatta	3 6	10 2	12 4	39 0	12 0 0

GOODS ROLLING STOCK.

Railway.	Gauge of Track.	Maximum Rolling Stock Gauge.		Length over all.	Maximum—	
		Width.	Height above Rail Level.		Tare.	Carrying Capacity.
	ft. in.	ft. in.	ft. in.	ft. in.	t. c. q.	t. c. q.
New South Wales	4 8½	9 8	13 6	60 11	20 10 3	40 0 0
Victoria	5 3	9 7½	13 7¾	55 4½	20 13 1	30 0 0
"	2 6	6 5½	9 7¼	27 3¾	7 12 2½	10 0 0
Queensland	3 6	8 9	12 0	45 5	14 16 0	21 8 0
"	2 0	6 6	9 0	22 0	4 10 0	16 0 0
South Australia	5 3	10 0¼	12 10¾	52 1	23 10 0	30 0 0
"	3 6	8 6	12 5¼	52 9	22 0 0	25 0 0
Western Australia	3 6	8 8	12 6	44 9	17 10 0	27 0 0
Tasmania	3 6	8 6	11 0	40 10	12 5 0	30 0 0
"	2 0	6 0	6 6	27 0	5 15 2	20 0 0
Federal—						
Trans-Australian	4 8½	10 6	14 6	47 6½	15 0 0	40 0 0
Northern Territory	3 6	9 4	12 9	34 6	9 10 0	12 0 0
Oodnadatta	3 6	10 2	12 4	18 0	5 0 0	12 0 0

In the above tables the transverse dimensions given are the greatest employed on any vehicle.

It will be observed that the dimensions adopted by the Federal Government for the Trans-Australian Railway are in excess of those at present in use on the 5-ft. 3-in. gauge lines of Victoria and South Australia, and the 4-ft. 8½-in gauge lines of New South Wales. It is, however, the intention of the latter State to adopt the Federal standard as soon as possible, and with that end in view a commencement has been made in the Sydney suburban area with the enlargement of bridges, tunnels, buildings and platforms to enable the larger rolling stock to be employed. The question of standard couplings on the New South Wales lines is also receiving attention.

6. *Mileage Open for Traffic, all Lines.*—(i) *General.* In all the States the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of Australia, lines have been constructed and managed by private companies, but at the present time nearly the whole of the railway traffic is in the hands of the State or Commonwealth Governments. A large proportion of the private lines has been laid down for the purpose of opening up forest lands, mining districts, or sugar areas, and these lines are not generally used for the conveyance of passengers or the public conveyance of goods. (See § 5 *Private Railways*, hereinafter.)

The subjoined table shows the mileage of Commonwealth Government, State Government, and private lines open for traffic (exclusive of sidings and cross-overs) in each State for each of the years 1917-18 to 1921-22. The railway mileage given for each State includes both Commonwealth and State Government railways in that State, and in this table and in those immediately following is estimated from the geographic point of view and not from that of ownership. The figures are to the end of the financial year ended on the 30th June, excepting the mileages for private lines, which are in most cases taken for the calendar year :—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE OPEN, 1918 TO 1922.

State or Territory.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	5,025.16	5,169.82	5,376.99	5,402.08	5,475.44
Victoria	4,222.70	4,260.58	4,284.65	4,337.35	4,374.73
Queensland	6,769.40	6,841.41	6,946.69	7,012.62	7,063.89
South Australia	3,356.45	3,404.10	3,458.26	3,463.35	3,487.37
Western Australia	4,904.33	4,965.48	4,846.02	4,905.83	4,867.48
Tasmania	781.71	811.03	840.25	877.01	872.49
Federal Capital Territory ..	4.94	4.94	4.94	4.94	4.94
Northern Territory	199.56	199.56	198.68	198.68	198.68
Australia	25,264.25	25,656.92	25,956.48	26,201.86	26,345.02

In previous issues of the Year Book particulars were given for different periods from 1855 onwards. (See No. 15, page 537.)

(ii) *Government and Private Lines Separately.* The subjoined table shows for each State (a) the length of lines owned by the State Government, and by the Commonwealth Government in that State, all of which lines are open for general use by the public, (b) the length of private lines available for general use by the public, and (c) the length not so available. The mileages specified in the case of Government lines are to the 30th June,

1922; those given for private lines are to the same date with the exception of Western Australia, which are to 31st December, 1921:—

RAILWAYS.—GOVERNMENT AND PRIVATE.—MILEAGE CLASSIFIED, 1921-22.

State or Territory.	Government Lines—		Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for special Purposes only.	Grand Total.
	State.	Federal.				
	Miles.	Miles.				
New South Wales	5,116.08	..	186.83	5,302.91	172.53	5,475.44
Victoria ..	4,316.86	..	24.94	4,341.80	32.93	4,374.73
Queensland ..	5,799.33	..	280.79	6,080.12	983.77	7,063.89
South Australia ..	2,357.21	1,075.41	33.80	3,466.42	20.95	3,487.37
Western Australia	3,538.23	453.99	278.35	4,270.57	596.91	4,867.48
Tasmania ..	636.80	..	197.61	834.41	38.08	872.49
Federal Capital Territory ..	..	4.94	..	4.94	..	4.94
Northern Territory	..	198.68	..	198.68	..	198.68
Australia ..	21,764.51	1,733.02	1,002.32	24,499.85	1,845.17	26,345.02

7. Comparative Railway Facilities.—The relations to populations and areas respectively of the mileage of line open to the public for general traffic (including both Government and private lines) on the 30th June 1922, are shown in the subjoined statement:—

RAILWAYS.—GOVERNMENT AND PRIVATE.—COMPARISON OF FACILITIES, 1922.

State or Territory.	Population, 30th June, 1922.	Area.	Mileage of Railway.	
			Per 1,000 of Population.	Per 1,000 sq. miles of Territory.
			Miles.	Miles.
New South Wales ..	2,147,655	309,432	2.55	17.70
Victoria ..	1,570,640	87,884	2.78	49.78
Queensland ..	785,449	670,500	8.99	10.54
South Australia ..	505,069	380,070	6.90	9.18
Western Australia ..	339,501	975,920	14.34	4.99
Tasmania ..	213,400	26,215	4.09	33.28
Federal Capital Territory ..	2,592	940	1.91	5.26
Northern Territory ..	3,663	523,620	54.24	0.38
Australia ..	5,567,969	2,974,581	4.73	8.86

8. Classification of Lines according to Gauge, 1921-22.—The subjoined table gives a classification, according to gauge, of the total mileage, exclusive of sidings and cross-overs, of (i) Commonwealth Government railways, given in the State or Territory in which situated; (ii) State Government railways; (iii) Private railways open to the public for general traffic; and (iv) Private lines open for special purposes. Particulars of Government railways are up to the 30th June, 1922, of private railways open for general

traffic to the 31st December, 1922, as nearly as possible, and of private railways open for special purposes to the 30th June, 1922, with the exception of Western Australia, the figures for which State are to the 31st December, 1921.

RAILWAYS.—GOVERNMENT AND PRIVATE.—GAUGES, 1921-22.

State or Territory in which situated.	Route mileage having a gauge of—								Total.
	5 ft. 3 in.	4ft. 8½ in.	3 ft. 6 in.	3 ft. 0in.	2 ft. 6 in.	2 ft. 3 in.	2 ft. 0 in.	1 ft. 8 in.	
FEDERAL RAILWAYS.									
South Australia ..	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Western Australia	597.46	477.95	..	..	..	..	..	1,075.41
Federal Capital Terri- tory	453.99	..	..	..	..	..	..	453.99
Northern Territory	4.94	..	..	..	..	..	..	4.94
	198.68	..	..	..	..	..	198.68
Total	1,056.39	676.63	..	..	..	..	..	1,733.02

STATE RAILWAYS.

New South Wales ..	..	5,076.57	39.51	..	..	..	..	..	5,116.08
Victoria ..	4,194.96	..	..	..	121.90	..	..	..	4,316.86
Queensland ..	..	..	5,769.07	..	..	..	30.26	..	5,799.33
South Australia ..	1,147.64	..	1,209.57	..	..	..	..	..	2,357.21
Western Australia ..	..	..	3,538.23	..	..	..	..	..	3,538.23
Tasmania ..	..	..	611.97	..	..	..	24.83	..	636.80
Total ..	5,342.60	5,076.57	11,168.35	..	121.90	..	55.09	..	21,764.51

PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.

New South Wales ..	45.00	78.91	36.67	..	..	..	26.25	..	186.83
Victoria ..	13.94	..	..	11.00	..	..	..	..	24.94
Queensland ..	..	..	121.20	..	7.00	..	152.59	..	280.79
South Australia ..	..	..	33.80	..	..	..	..	..	33.80
Western Australia ..	..	..	278.35	..	..	..	..	..	278.35
Tasmania ..	..	..	181.12	..	..	..	16.49	..	197.61
Total ..	58.94	78.91	651.14	11.00	7.00	..	195.33	..	1,002.32

PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.

New South Wales ..	..	158.77	3.50	..	..	..	10.26	..	172.53
Victoria ..	15.83	..	..	4.50	..	..	12.60	..	32.93
Queensland ..	..	..	224.04	..	240.00	..	519.73	..	983.77
South Australia ..	..	..	..	..	2.00	3.60	15.35	..	20.95
Western Australia ..	..	..	555.91	..	..	..	14.00	27.00	596.91
Tasmania ..	..	..	21.00	..	..	..	17.08	..	38.08
Total ..	15.83	158.77	804.45	4.50	242.00	3.60	589.02	27.00	1,845.17

ALL RAILWAYS.

New South Wales ..	45.00	5,314.25	79.68	..	..	..	36.51	..	5,475.44
Victoria ..	4,224.73	..	..	15.50	121.90	..	12.60	..	4,374.73
Queensland ..	..	..	6,114.31	..	247.00	..	702.58	..	7,063.89
South Australia ..	1,147.64	597.46	1,721.32	..	2.00	3.60	15.35	..	3,487.37
Western Australia ..	..	453.99	4,372.49	..	..	..	14.00	27.00	4,867.48
Tasmania ..	..	..	814.09	..	..	..	58.40	..	872.49
Federal Capital Territory ..	..	4.94	..	..	..	..	..	..	4.94
Northern Territory ..	..	..	198.68	..	..	..	..	..	198.68
GRAND TOTAL	5,417.37	6,370.64	13,300.57	15.50	370.90	3.60	839.44	27.00	26,345.02

§ 2. Federal Railways.

1. **General.**—On the 1st January, 1911, the Commonwealth Government took over the Northern Territory from the South Australian Government, and at the same time the railways from Darwin to Pine Creek in the Northern Territory, and from Port Augusta to Oodnadatta in South Australia, came under its control. Subsequently the construction of a transcontinental line from Port Augusta in South Australia, to Kalgoorlie in Western Australia, was undertaken by the Commonwealth Government, while a line has been constructed in the Federal Capital Territory, connecting Canberra with the New South Wales railway system at Queanbeyan. In 1917 an Act was passed by which all the Federal railways were vested in a Commonwealth Railways Commissioner.

2. **Northern Territory Railway.**—(i) *Darwin to Katherine.* On the 1st January, 1911, the line from Darwin to Pine Creek came under the jurisdiction of the then Department of External Affairs, and was worked under the Administrator of the Northern Territory. As mentioned above, the management of this railway is now vested in the Commonwealth Railways Commissioner.

In the Northern Territory Acceptance Act, the construction of a transcontinental line from South Australia is provided for. The extension of the line from Pine Creek to Katherine River has been completed, and the first train ran through to Emungalan (Katherine River) on 13th May, 1917.

(ii) *Proposed Extension.* The selection of the route of the transcontinental line from North to South has been the subject of investigations by the Parliamentary Standing Committee on Public Works which, after a tour of inspection and the taking of a mass of evidence, recommended to Parliament that—

- (a) the existing line (Darwin to Emungalan) be extended to Daly Waters on the understanding that it is to form portion of an eventual line through Newcastle Waters to Camooweal;
- (b) a light level line be constructed from Oodnadatta to Alice Springs;
- (c) these lines be regarded as providing sufficient railway development for the Northern Territory for some years;
- (d) the 3 ft. 6 in. gauge be adopted.

Several other recommendations relative to sleepers and rails, bridges, labour, and the developmental policy of the Northern Territory were also submitted.

3. **Port Augusta to Oodnadatta Railway.**—This line was taken over by the Commonwealth Government from 1st January, 1911, but was held under lease by the South Australian Government until 31st December, 1913. From the 1st January, 1914, the line has been worked by the South Australian Government for and on behalf of the Commonwealth. It is provided in the Northern Territory Acceptance Act that the Commonwealth shall annually reimburse the State with the interest payable on the amount of loans raised by the State for the purpose of constructing the railway, and the agreement for working the line prescribes that the Commonwealth is responsible to the State for any financial loss incurred by the State in the working and management of the railway, but is entitled to receive from the State any profit made in such working and management.

4. **Federal Capital Territory Railway—Queanbeyan-Canberra.**—This line was built by the Railway Construction Branch of the Public Works Department, New South Wales, and was completed and taken over by the Chief Commissioner of Railways for that State, who has since worked the line for and on behalf of the Commonwealth Government. The line was opened for departmental goods traffic on 25th May, 1914. It connects with the New South Wales railway system at Queanbeyan, is 4.94 miles in length, and has sidings of an aggregate length of 2.00 miles.

5. **Trans-Australian Railway (Kalgoorlie to Port Augusta).**—In the issue of the Year Book for 1918 (No. 11, pp. 663 to 666 and p. 1213), a short history of the construction of the Trans-Australian line is given, also a description of the country through which the line passes between Kalgoorlie and Port Augusta.

On the 22nd October, 1917, the first through train left Port Augusta with an official party on board for Kalgoorlie. It should be mentioned that owing to deviations from the original route, the length of this line was reduced from 1,063.39 miles to 1,051.45 miles, a saving of 11.94 miles. |

6. Lines Open, Surveyed, etc.—The following table shows the lines open for traffic under the control of the Commonwealth Government at 30th June, 1922, together with the lines which have been or are being surveyed :—

RAILWAYS, FEDERAL, 30th JUNE, 1922.

Terminals.				Miles.
OPEN FOR TRAFFIC.				
Trans-Australian—Port Augusta (South Australia) to Kalgoorlie (Western Australia)	..	..	..	1,051.45
Port Augusta to Oodnadatta (South Australia)	..	..	..	477.95
Queanbeyan to Canberra (Federal Capital Territory)	..	..	..	4.94
Northern Territory Railway—Darwin to Emungalan, Katherine River	..	..	..	198.68
Total opened for traffic	..	..	..	1,733.02
SURVEYED, OR BEING SURVEYED.				
Katherine River to Mataranka (Northern Territory)	..	..	..	65.44
Mataranka to Daly Waters (Northern Territory)	..	..	..	95.00
Kingoonya to Boorthanna (South Australia)	..	..	..	176.44
Canberra to Jervis Bay (Federal Capital Territory)	..	..	..	140.22
Canberra (Federal Capital Territory) to Federal Capital Territory Border in the direction of Yass (New South Wales)	..	..	..	11.67
Daly Waters (Northern Territory) to Oodnadatta (South Australia)	..	..	..	851.50
Port Augusta to Crystal Brook (South Australia)	..	..	..	69.25
Total surveyed or being surveyed	..	..	..	1,409.52

7. Mileage open, worked, and Train miles run.—The following table shows the length of the Federal railways open for traffic, average miles worked, and the train miles run in the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES, 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
MILES OPEN FOR TRAFFIC.					
	Miles.	Miles.	Miles.	Miles.	Miles.
1918	1,051	478	5	200	1,734
1919	1,051	478	5	200	1,734
1920	1,051	478	5	199	1,733
1921	1,051	478	5	199	1,733
1922	1,051	478	5	199	1,733

RAILWAYS, FEDERAL.—MILEAGE OPEN, WORKED, AND TRAIN MILES,
1918 to 1922—*continued*.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	

AVERAGE MILES WORKED.

	Miles.	Miles.	Miles.	Miles.	Miles.
1918	1,051	478	5	200	1,734
1919	1,051	478	5	200	1,734
1920	1,051	478	5	199	1,733
1921	1,051	478	5	199	1,733
1922	1,051	478	5	199	1,733

TRAIN MILES RUN.

1918	475,336	259,838	1,127	112,648	849,549
1919	368,886	221,763	1,015	83,209	674,873
1920	401,709	262,917	1,000	60,348	725,974
1921	472,290	320,292	1,058	17,270	810,910
1922	471,061	242,751	1,263	16,078	731,153

8. Cost of Construction and Equipment.—In the following table particulars are given of the cost of construction and equipment for traffic of the undermentioned railways for each of the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—CAPITAL COST, 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans- Australian	Oodnadatta. (a)	Federal Capital Territory. (b)	Northern Territory.	

TOTAL COST OF CONSTRUCTION AND EQUIPMENT OF LINES OPEN.

	£	£	£	£	£
1918	6,674,278	2,281,939	47,883	1,695,556	10,699,656
1919	6,911,624	2,282,973	48,124	1,707,392	10,950,113
1920	7,053,900	2,282,934	48,144	1,709,932	11,094,910
1921	7,137,365	2,287,193	48,144	1,711,535	11,184,287
1922	7,213,923	2,296,139	48,144	1,718,021	11,276,227

COST PER MILE OPEN.

1918	6,349	4,774	9,693	8,496	6,171
1919	6,574	4,776	9,742	8,556	6,316
1920	6,710	4,776	9,746	8,607	6,402
1921	6,788	4,785	9,746	8,615	6,454
1922	6,861	4,804	9,746	8,647	6,507

(a) Exclusive of Rolling Stock the property of South Australian Government Railways.
(b) Exclusive of Rolling Stock the property of New South Wales Government Railways.

9. Gross Revenue.—(i) *Total, per average mile worked, and per train mile run.* The following table shows the total revenue from all sources, the revenue per average mile worked and the revenue per train mile run for each of the undermentioned railways for the financial years from 1918 to 1922 inclusive :—

RAILWAYS, FEDERAL.—GROSS REVENUE, TOTAL, ETC., 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
TOTAL GROSS REVENUE.					
	£	£	£	£	£
1918	175,039	69,231	705	32,511	277,486
1919	175,134	58,286	407	32,237	266,064
1920	213,388	74,709	571	27,089	315,757
1921	206,871	112,091	1,240	12,214	332,416
1922	206,826	99,462	1,847	14,364	322,499
GROSS REVENUE PER AVERAGE MILE WORKED.					
1918	166	145	141	163	160
1919	167	122	82	162	153
1920	203	156	116	136	182
1921	197	235	251	62	192
1922	197	208	374	72	186
GROSS REVENUE PER TRAIN-MILE RUN.					
	d.	d.	d.	d.	d.
1918	88.27	63.95	150.13	69.27	78.39
1919	113.94	63.08	96.24	92.98	94.62
1920	127.49	68.25	137.04	107.73	104.39
1921	105.12	83.99	281.29	169.74	98.38
1922	105.37	98.34	350.97	214.41	105.86

(ii) *Classified and Percentages.* The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains ; (b) receipts from the carriage of goods and live stock ; and (c) rents and miscellaneous items. The subjoined table shows the gross revenue for 1918 to 1922 classified according to the three chief sources of receipts, together with their percentages on the total revenue. The respective totals of the three items are given in the preceding table.

RAILWAYS, FEDERAL.—RECEIPTS, VARIOUS SOURCES, 1918 TO 1922.

Year ended 30th June—	Railway.									
	Trans-Australian.		Oodnadatta.		Federal Capital Territory.		Northern Territory.		Total.	
	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.
COACHING TRAFFIC RECEIPTS.										
	£	%	£	%	£	%	£	%	£	%
1918	72,352	41.33	14,586	21.07	31	4.40	5,341	16.43	92,310	33.27
1919	93,867	53.60	12,455	21.37	34	8.25	5,250	16.28	111,606	41.95
1920	95,671	44.83	10,600	14.19	15	2.63	4,433	16.36	110,719	35.07
1921	128,953	62.34	18,589	16.58	20	1.61	2,700	22.11	150,262	45.20
1922	139,192	67.30	19,669	19.78	48	2.60	2,685	18.69	161,594	50.11
GOODS AND LIVE STOCK RECEIPTS.										
1918	77,339	41.19	51,213	73.97	674	95.60	19,539	60.10	148,765	53.61
1919	50,485	28.83	43,194	74.11	373	91.75	19,676	61.04	113,728	42.74
1920	82,490	38.67	61,401	82.19	453	79.33	14,930	55.12	159,274	50.44
1921	39,750	19.21	90,802	81.01	1,210	97.58	4,859	39.78	136,621	41.10
1922	31,081	15.03	76,710	77.12	1,779	96.32	5,194	36.16	114,764	35.58
MISCELLANEOUS RECEIPTS.										
1918	25,348	14.48	3,432	4.96	..	..	7,631	23.47	36,411	13.12
1919	30,783	17.57	2,636	4.52	..	..	7,311	22.68	40,730	15.31
1920	35,227	16.50	2,708	3.62	103	18.04	7,726	28.52	45,764	14.49
1921	38,168	18.45	2,700	2.41	10	0.81	4,655	38.11	45,533	13.70
1922	36,553	17.67	3,083	3.10	20	1.08	6,485	45.15	46,141	14.31

10. **Working Expenses.**—(i) *Total.* The following table shows the total working expenses, and the percentages of the total of those expenses on the corresponding gross revenues of each railway for each year from 1918 to 1922.

Details of the annual expenditure on (a) maintenance of ways, works and buildings ; (b) locomotives, carriages and wagons repairs and renewals, (c) traffic expenses, and (d) compensation, general and miscellaneous charges, are given on the next page.

RAILWAYS, FEDERAL.—WORKING EXPENSES, TOTAL, ETC., 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
TOTAL WORKING EXPENSES.					
	£	£	£	£	£
1918	232,468	100,179	1,496	53,482	387,625
1919	243,988	111,362	1,288	50,617	407,255
1920	256,027	112,192	801	48,617	417,637
1921	298,209	172,552	655	27,551	498,967
1922	255,434	177,369	1,308	26,511	460,622

PERCENTAGE OF WORKING EXPENSES ON REVENUE.

	%	%	%	%	%
1918	132.81	144.70	212.20	164.50	139.69
1919	139.31	191.06	316.45	157.02	153.07
1920	119.98	150.17	140.28	179.47	132.26
1921	144.15	153.94	52.82	225.57	150.10
1922	123.50	178.33	70.82	184.56	142.83

(ii) *Averages.* The following table shows the working expenses per average mile worked and per train-mile run for each railway for the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—WORKING EXPENSES, AVERAGES, 1918 TO 1922.

Year ended 30th June—	Railway.				Total.
	Trans- Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	
WORKING EXPENSES PER AVERAGE MILE WORKED.					
	£	£	£	£	£
1918	221	198	299	267	220
1919	232	233	261	254	235
1920	243	235	162	245	241
1921	284	361	133	139	288
1922	243	371	265	133	266

WORKING EXPENSES PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.
1918	117.23	87.25	318.58	113.95	107.89
1919	158.74	120.52	304.55	145.99	145.00
1920	152.96	102.41	192.40	193.34	138.07
1921	151.54	129.30	148.59	382.87	147.67
1922	130.14	175.36	248.55	395.73	151.20

(iii) *Distribution and Percentages.* The subjoined table shows the distribution of working expenses among four chief heads of expenditure for the years 1918 to 1922, together with their percentages on the total working expenses which are given in 10 (i) hereinbefore :—

RAILWAYS, FEDERAL.—DISTRIBUTION OF WORKING EXPENSES, 1918 TO 1922.

Year ended 30th June.	Railway.								Total.	
	Trans-Australian.		Oodnadatta.		Federal Capital Territory.		Northern Territory.			
	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.	Total.	Per Cent.

MAINTENANCE.

	£	%	£	%	£	%	£	%	£	%
1918 ..	64,990	27.96	39,673	39.60	609	40.71	23,699	44.31	128,971	33.27
1919 ..	71,309	29.23	45,284	40.67	601	46.66	21,500	42.48	138,694	34.06
1920 ..	72,197	28.20	43,967	39.19	553	69.04	20,664	42.51	137,381	32.89
1921 ..	99,559	33.38	57,920	33.57	254	38.78	13,236	48.04	170,969	34.27
1922 ..	75,941	29.73	78,780	44.42	736	56.27	14,683	55.38	170,140	36.94

LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.

1918 ..	121,574	52.30	48,302	48.22	544	36.36	22,309	41.71	192,729	49.72
1919 ..	118,163	48.43	52,377	47.03	351	27.25	20,796	41.09	191,687	47.07
1920 ..	119,753	46.77	53,437	47.63	196	24.47	19,841	40.81	193,227	46.27
1921 ..	128,680	43.15	94,381	54.70	340	51.91	9,269	33.64	232,670	46.63
1922 ..	112,317	43.97	79,640	44.90	508	38.84	4,848	18.29	197,313	42.84

TRAFFIC EXPENSES.

1918 ..	11,022	17.64	10,400	10.38	343	22.93	5,704	10.67	57,469	14.83
1919 ..	47,572	19.50	11,471	10.30	336	26.09	7,104	14.03	66,483	16.32
1920 ..	54,606	21.33	12,803	11.41	52	6.49	6,881	14.15	74,342	17.80
1921 ..	41,294	13.85	17,656	10.23	61	9.31	4,129	14.99	63,140	12.65
1922 ..	38,416	15.04	16,609	9.36	64	4.89	6,248	23.57	61,337	13.31

OTHER CHARGES.

1918 ..	4,882	2.10	1,804	1.80	..	..	1,769	3.31	8,455	2.18
1919 ..	6,944	2.84	2,230	2.00	..	..	1,217	2.40	10,391	2.55
1920 ..	9,471	3.70	1,985	1.77	..	..	1,231	2.53	12,687	3.04
1921 ..	28,676	9.62	2,595	1.50	..	..	917	3.33	32,188	6.45
1922 ..	28,760	11.26	2,340	1.32	..	..	732	2.76	31,832	6.91

11. *Passenger Journeys, and Tonnage of Goods and Live Stock.*—(i) *General.* In the next table particulars are given of the passenger journeys, and tonnage of goods and live stock carried on the Federal railways during the years 1918 to 1922 :—

RAILWAYS, FEDERAL.—TRAFFIC, 1918 TO 1922.

Year ended 30th June.	Railway.				Total.
	Trans-Australian.	Oodnadatta.	Federal Capital Territory.	Northern Territory.	

PASSENGER JOURNEYS.

	No.	No.	No.	No.	No.
1918 ..	17,934	(a)	300	11,546	(b) 29,780
1919 ..	23,942	51,516	93	5,842	81,393
1920 ..	22,968	55,742	..	4,818	83,528
1921 ..	29,686	69,407	..	3,704	102,797
1922 ..	28,003	64,477	..	3,343	95,823

TONNAGE OF GOODS AND LIVE STOCK CARRIED.

	tons.	tons.	tons.	tons.	tons.
1918 ..	124,806	(a)	7,261	40,862	(b) 172,929
1919 ..	116,971	57,565	4,385	35,124	214,045
1920 ..	53,722	94,892	4,691	23,122	176,427
1921 ..	20,089	87,879	6,913	3,610	118,491
1922 ..	20,780	76,089	9,817	2,251	108,937

(a) Not available.

(b) Exclusive of Oodnadatta Line.

(ii) *Passenger Mileage Summary.* The subjoined table gives particulars of "Passenger Mileage" on each of the Federal Railways for the year 1921-22 :—

RAILWAYS, FEDERAL.—PASSENGER MILES SUMMARY, 1921-22.

Railway.	Passenger Train Mileage.	Number of Passenger Journeys.	Total "Passenger-Miles."	Amount Received from Passengers.	Average Number of Passengers carried per Train Mile.	Average Mileage per Passenger Journey.	Average Earnings per "Passenger-Mile."	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
			,000 omitted.	£			d.	£ s. d.	
Trans-Australian ..	367,099	28,003	24,157	110,941	7.59	862.65	1.10	3 19 2.8	22,975
Oodnadatta ..	43,960	64,477	2,579	15,929	9.60	40.00	1.48	0 4 11.3	5,397
Federal Capital Territory ..	5,197	3,343	286	2,554	520	85.65	2 14	0 15 3.4	1,441
Northern Territory ..									

(iii) *Ton Mileage Summary.* Particulars of ton mileage are shown hereunder in respect of each of the Federal Railways for the year 1921-22 :—

RAILWAYS, FEDERAL.—"TON MILEAGE" SUMMARY, 1921-22.

Railway.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Goods Earnings.	Average Freight-paying Load per Train Mile.	Average Miles per ton.	Earnings per "Ton-Mile."	Density of Traffic per Average Mile Worked.
			,000 omitted.	£			d.	
Trans-Australian ..	103,962	20,780	7,165	31,081	559.64	344.82	1.04	6,815
Oodnadatta ..	198,791	76,089	7,520	76,710	(a)	98.83	2.45	15,734
Federal Capital Territory ..	1,263	9,817	49	1,773	42.26	5.00	8.70	9,936
Northern Territory ..	10,881	2,251	361	5,194	(a)	160.58	3.45	1,819

(a) Not available.

12. *Passenger Fares, Goods Rates, and Parcel Rates.*—(i) *Passenger Fares.* In the following table the fares for certain specified distances on the Trans-Australian, Oodnadatta, and Northern Territory railways are set out :—

RAILWAYS, FEDERAL.—PASSENGER MILEAGE RATES, 1922.

Single Fare for a Journey of—	Trans-Australian Railway.				Oodnadatta Railway.				Northern Territory Railway.			
	First Class.		Second Class.		First Class.		Second Class.		First Class.		Second Class.	
	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.	Fare.	Average per Passenger-Mile.
	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.	s. d.	d.
Miles.												
50	9 7	2.30	6 5	1.54	9 9	2.34	6 7	1.58	11 6	2.76	7 8	1.84
100	19 2	2.30	12 9	1.53	19 9	2.37	13 3	1.59	22 11	2.75	15 3	1.83
200	38 4	2.30	25 7	1.54	39 3	2.36	26 0	1.56	45 10	2.75	30 7	1.83
300	57 6	2.30	38 4	1.53	58 6	2.34	39 3	1.57	..	..	..	..
400	64 7	1.94	43 1	1.29	78 0	2.34	52 0	1.56	..	..	..	..
500	77 1	1.85	51 5	1.23	..	..	..	..	..	..	..	..
600	89 7	1.79	59 9	1.20	..	..	..	..	..	..	..	..
700	102 1	1.75	68 1	1.17	..	..	..	..	..	..	..	..
800	110 5	1.66	73 8	1.11	..	..	..	..	..	..	..	..
900	117 9	1.57	78 6	1.05	..	..	..	..	..	..	..	..
1,000	122 11	1.48	81 11	0.98	..	..	..	..	..	..	..	..
1,051	125 0	1.43	83 4	0.95	..	..	..	..	..	..	..	..

In the case of the Trans-Australian railway, through passengers have to pay for sleeping berths and meals in addition to the ordinary fares. For the first class sleeping-berths the charge is twelve shillings and sixpence for a night or part of a night, the corresponding charge for the second class being eight shillings. There is a fixed scale of

charges made in respect of the meals served to other than through passengers between Port Augusta and Kalgoorlie. It will be observed that both the first and second class fares on the Trans-Australian railway have a constant rate for distances up to 300 miles and then have a tapering character beyond that distance; while those for the Oodnadatta and the Northern Territory railways are practically uniform for all distances.

(ii) *Agricultural Produce and Ordinary Goods Rates.* The rates for agricultural produce and ordinary goods on the Trans-Australian and Northern Territory railways are set out in the following tables :—

RAILWAYS, FEDERAL.—RATES FOR AGRICULTURAL PRODUCE, 1922.

For a haul of—		Northern Territory Railway.		Trans-Australian Railway.		For a haul of—		Trans-Australian Railway, contd.	
		Rate per Ton in Truck Loads.	Average per Ton-Mile.	Rate per Ton in Truck Loads.	Average per Ton-Mile.			Rate per Ton in Truck Loads.	Average per Ton-Mile.
		s. d.	d.	s. d.	d.			s. d.	d.
50 miles	..	8 5	2.02	6 3	1.50	600 miles	..	38 4	0.77
100 "	..	13 8	1.64	10 1	1.21	700 "	..	42 6	0.73
200 "	..	24 1	1.44	17 9	1.07	800 "	..	46 8	0.70
300 "	..	..	..	24 11	0.99	900 "	..	50 5	0.67
400 "	..	..	..	27 6	0.83	1,000 "	..	53 9	0.65
500 "	..	..	..	33 4	0.80	1,051 "	..	55 0	0.63

RAILWAYS, FEDERAL.—RATES FOR ORDINARY GOODS, 1922.

For a Haul of—		Northern Territory Railway.				Trans-Australian Railway.				For a Haul of—		Trans-Australian Railway, <i>contd.</i>							
		Class of Freight.				Class of Freight.						Class of Freight.							
		Highest.		Lowest.		Highest.		Lowest.				Highest.		Lowest.					
		Rate per Ton.	Average per Ton-Mile.	Rate per Ton.	Average per Ton-Mile.	Rate per Ton.	Average per Ton-Mile.	Rate per Ton.	Average per Ton-Mile.			Rate per Ton.	Average per Ton-Mile.	Rate per Ton.	Average per Ton-Mile.				
Miles.	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	Miles.	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>						
50	39	5	9.46	8	5	2.02	36	2	8.68	6	3	1.50	600	223	9	4.48	38	4	0.77
100	71	11	8.63	13	8	1.54	56	2	6.74	10	1	1.21	700	239	5	4.10	42	6	0.73
200	133	2	7.99	24	1	1.45	122	5	7.34	17	9	1.07	800	255	0	3.83	46	8	0.70
300	..	..	..	..	..	..	164	6	6.58	24	11	0.99	900	269	1	3.59	50	5	0.67
400	..	..	..	..	..	..	172	2	5.17	27	6	0.83	1,000	281	7	3.38	53	9	0.65
500	..	..	..	..	..	..	201	4	4.83	33	4	0.80	1,051	287	6	3.28	55	0	0.63

In the above tables it will be seen that the average rates per ton-mile are of a tapering character.

(iii) *Parcel Rates.* On the Trans-Australian railway, parcels weighing between 85 and 112 lbs. are taken by passenger train 500 miles for thirteen shillings and threepence.

13. *Rolling Stock, 1922.*—The following table shows the numbers of locomotives and rolling stock in use on the Federal railways, classified according to gauge :—

RAILWAYS, FEDERAL.—LOCOMOTIVES AND ROLLING STOCK, 1922.

Railway.	Gauge.		Total.	Gauge.		Total.	Gauge.		Total.
	4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.		4 ft. 8½ in.	3 ft. 6 in.	
	LOCOMOTIVES.			COACHING STOCK.			STOCK OTHER THAN COACHING.		
Trans-Australian	68	1	69	46	..	46	737	31	768
Northern Territory	..	13	13	..	8	8	..	303	303
Total	68	14	82	46	8	54	737	334	1,071

The Oodnadatta and Federal Capital Territory Railways are worked by the South Australian and New South Wales Government Railways Departments respectively, which use their own rolling stock.

14. **Employees.**—The following table shows the number of employees on the Federal railways at 30th June in each year from 1918 to 1922 inclusive, classified according to salaried and wages staffs :—

RAILWAYS, FEDERAL.—EMPLOYEES, 1918 TO 1922.

Railway.	30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
Trans-Australian	No. 201	No. 913	No. 194	No. 846	No. 184	No. 798	No. 172	No. 961	No. 161	No. 802
Oodnadatta (a) ..	..	..	..	..	..	..	..	..	..	..
Federal Capital Territory (b) ..	12	164	20	150	12	79	7	60	8	54
Northern Territory										
Total ..	213	1,077	214	996	196	877	179	1,021	169	856

(a) Worked by South Australian Government Railways.
(b) Worked by New South Wales Government Railways.

15. **Accidents.**—(i) *Classification.* As a uniform method of recording accidents has been adopted by the States and Federal Railways Commissioners the statistics relative to accidents connected with the movement of rolling stock on each line during the year 1921-22 is published in the form hereunder for the first time :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1921-22.

[illegible]

(ii) *Particulars for Quinquennium 1918-22.* The following table shows the number of accidents which have occurred during each of the years 1918 to 1922 inclusive :—

RAILWAYS, FEDERAL.—ACCIDENTS, 1918 TO 1922.

Railway.	Number of Persons—									
	Killed.					Injured.				
	1918.	1919.	1920.	1921.	1922.	1918.	1919.	1920.	1921.	1922.
Trans-Australian ..	3	1	3	..	..	13	10	6	3	8
Oodnadatta ..	1	..	..	..	..	12	8	12	6	8
Federal Capital Territory ..	..	..	..	..	..	..	..	..	..	..
Northern Territory ..	..	..	..	3	..	1	..	3	1	1
Total ..	4	1	3	3	..	26	18	21	10	17

§ 3. State Railways.

1. *Administration and Control of State Railways.*—In each State of the Commonwealth the policy has been established that the railways should be under the control of the Government. This policy, as has been shown, was adopted early in the railway history of Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. Earlier issues of the Year Book (see No. 6, p. 693) contain a description of the methods adopted by the various State Governments in the control and management of their railways.

2. *Mileage Open, 1918 to 1922.*—The following table shows the length of State railways open for traffic on the 30th June in the years 1918 to 1922 :—

RAILWAYS, STATE.—MILEAGE OPEN FOR TRAFFIC, 1918 TO 1922.

Year ended 30th June—			N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
			Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1918 ..	..	..	4,678	4,152	5,295	2,242	3,491	588	20,446
1919 ..	..	..	4,825	4,190	5,469	2,290	3,538	601	20,913
1920 ..	..	..	5,015	4,214	5,685	2,333	3,538	629	21,414
1921 ..	..	..	5,043	4,267	5,752	2,333	3,538	630	21,563
1922 ..	..	..	5,116	4,317	5,799	2,357	3,538	637	21,764

A graph indicating the mileage open in the Commonwealth at the end of each of the years 1870 to 1922 accompanies this chapter.

The following statement shows the actual mileage opened for traffic in the year 1922, and also the annual average increase in mileage opened since 1912 in each State :—

RAILWAYS, STATE.—MILEAGE OPENED ANNUALLY.

Mileage.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total all States.
Mileage opened during 1921-22 ..	73.30	50.28	47.62	24.02	..	6.96	202.18
Average annual mileage increase for 10 years to 30th June, 1922 ..	128.41	69.44	167.63	89.58	94.07	14.10	563.23

(i) *New South Wales.* During the year ended 30th June, 1922, the extensions from Nimmitabel to Bombala (37.53 miles); Rozelle Bay to Darling Island (2.47 miles); and from Yanco to Griffith (33.66 miles) were opened for traffic. A few small readjustments of actual mileage on existing lines were made, reducing the mileage opened by 0.36 miles.

(ii) *Victoria.* The following lines were opened for traffic during 1921-22:—Bittern to Red Hill (9.91 miles); Yarram to Won Wron (8.38 miles); Koo-Wee-Rup to Strzelecki (30.69 miles); and Morwell Brown Coal line to Yallourn (1.30 miles); a total distance of 50.28 miles.

(iii) *Queensland.* The increase of 47.62 miles in the mileage opened for traffic in 1921-22 was due to the opening of the following lines:—St. Lawrence to Carmila (33.00 miles); Tarzali to Millaa Millaa (9.35 miles); and Gargett to near Owen's Creek (5.53 miles). Certain minor readjustments to the mileage of existing lines reduced the mileage by 0.26 miles.

(iv) *South Australia.* A line from Clare to Spalding (24.30 miles) was opened for traffic, while two small adjustments decreased the existing mileage by 0.28 miles. The net increase in mileage open for the year was 24.02 miles.

(v) *Western Australia.* For the third year in succession there were no additional new lines opened during the year.

(vi) *Tasmania.* During the year the line from Irishtown to Smithton (5.25 miles) was completed and taken over, and several adjustments increased the existing mileage by 1.71 miles, making a total increase of 6.96 miles.

3. **Length and Gauge of Railway Systems in each State.**—In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems. A summary showing concisely the gauge and length of the main and branch lines included in each division or system of the different States for the year ended 30th June, 1922, is given in the Transport and Communication Bulletin No. 14 issued by this Bureau.

4. **Average Mileage Worked and Train-Miles Run.**—The total mileage open for traffic at the end of each financial year has been given previously, but, in considering the returns relating to revenue and expenditure and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shows the average number of miles worked and the total number of train-miles run by the Government railways of each State during the years 1918 to 1922 inclusive:—

RAILWAYS, STATE.—MILEAGE WORKED AND MILES RUN, 1918 TO 1922.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AVERAGE MILEAGE WORKED.							
1918 ..	4,551	4,139	5,281	2,235	3,463	591	20,260
1919 ..	4,737	4,159	5,324	2,285	3,507	599	20,611
1920 ..	4,966	4,194	5,635	2,316	3,538	635	21,284
1921 ..	5,019	4,237	5,733	2,333	3,538	637	21,497
1922 ..	5,077	4,279	5,784	2,344	3,538	635	21,657
TRAIN-MILES RUN.							
1918 ..	18,143,267	13,626,371	10,319,694	5,440,515	4,094,510	1,056,373	52,680,730
1919 ..	19,935,202	13,031,655	9,942,744	5,412,924	4,256,627	1,107,890	53,687,042
1920 ..	22,834,889	15,022,465	10,443,619	5,192,038	4,851,446	1,266,625	59,611,082
1921 ..	22,792,053	15,533,556	10,735,723	5,712,491	4,918,113	1,387,417	61,079,353
1922 ..	21,887,065	15,856,815	9,634,532	5,629,957	4,564,631	1,433,099	59,006,099

In some years the average mileage worked by the Government in Tasmania is greater than the Government mileage open owing to the Railway Department having running powers over certain private lines.

A decrease in train-mileage occurs principally in the States of New South Wales and Queensland, where the goods-train-mileage was respectively 982,559 and 1,035,871 miles less than the previous year.

5. *Lines under Construction, and Lines Authorized, 1922.*—(i) *General.* The following statement gives particulars up to the 30th June, 1922, of the mileage of State railways (a) under construction, and (b) authorized for construction but not commenced :—

**RAILWAYS, STATE.—MILEAGE UNDER CONSTRUCTION AND AUTHORIZED,
30th JUNE, 1922.**

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	All States.
Mileage under construction	a584.70	35.00	b466.00	115.00	c120.75	37.75	1,359.20
Mileage authorized but not commenced ..	87.39	41.25	1,178.00	28.75	54.75	..	1,390.14

(a) Exclusive of 155.70 miles on which work has been suspended.

(b) Exclusive of 289 miles on which work has been suspended.

(c) Exclusive of 53.25 miles on which work has been suspended.

(ii) *Lines under Construction.* In spite of the great extensions of State railways since the year 1875, there are still, in some of the States, immense areas of country which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished. The general policy of the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view.

(a) *New South Wales.* The total mileage under construction was 584.70 miles, consisting of the following lines :—Coff's Harbour to Glenreagh (26.38 miles); Molong to Dubbo (80.00 miles); Binnaway to Werris Creek (90.88 miles); Coonabarabran to Burren Junction (95.36 miles); Griffith to Hillston (66.15 miles); Barmedman to Rankin's Springs (70.91 miles); Gilmore to Batlow (22.00 miles); Canowindra to Eugowra (26.70 miles); Glenreagh to Dorrigo (44.25 miles); Regent's Park to Cabramatta and Enfield (8.10 miles); Macksville to Raleigh (20.68 miles); Tarana to Oberon (16.00 miles); and Sydenham to Botany (6.20 miles). Work on the City and Suburban Electric Railway (11.09 miles) was recommenced after being shut down for four and a half years.

The line from Westmead to Dural (1.56 miles) was completed on the 12th November, 1921, but had not been opened for traffic at 30th June, 1922.

A line from Trida to Menindie (155.70 miles) has been commenced, but work was suspended at 30th June, 1922.

(b) *Victoria.* In this State a 5-ft. 3-in. gauge line is being constructed from Red Cliffs to Millewa North, a distance of 35.00 miles.

(c) *Queensland.* In previous issues of the Year Book details were given of the scheme of railway construction under the provisions of the North Coast Railway Act 1910 (see Year Book No. 15, p. 551). On the 30th June, 1922, the following lines, of an aggregate length of 466 miles, were under construction :—Northern Division—Gargett to Owen's Creek (6 miles); Merinda to Bowen Coal Fields (49 miles); North Coast Railway—Daradgee to Tully River (36 miles); Tully River to Cardwell (24 miles); Lilypond to Cardwell (28 miles); Farleigh to Proserpine (68 miles); Central Division—Many Peaks to Monto (45 miles); Rannes to Monto (109 miles). Southern Division—Mundubera to Monto (65 miles); Murgon to Preston (26 miles); Kalbar to Mt. Edwards (10 miles). The following lines are partially constructed, but work thereon is temporarily suspended :—Tara to Surat (50 miles); Wallaville to Kalliwā (18 miles); Longreach to Winton (109 miles); Yarakā to Powell's Creek (27 miles); Dajarra to Moonah Creek (41 miles); Mt. Molloy Extension (7 miles); and Winton to 37-Mile (37 miles); a total of 289 miles.

(d) *South Australia.* In this State the lines under construction on the 30th June, 1922, were as follows :—Wandana to Penong (54.00 miles), and Long Plains to Redhill (61.00 miles), an aggregate distance of 115.00 miles.

(e) *Western Australia.* The following lines were in course of construction by the Public Works Department on the 30th June, 1922 :—Esperance northward (60 miles).

Mt. Marshall Extension (23 miles), and from Busselton to Margaret River (37.75 miles), a total of 120.75 miles. The construction of the line from Narembeen to Merredin (53.25 miles) is at present in abeyance.

(f) *Tasmania*. At 30th June, 1922, the following lines were under construction :—Myalla to Wiltshire (27.25 miles); Marrawah Tram Extension (1.25 miles); Melrose Extension (4.75 miles); and Preolenna Extension (4.50 miles); a total of 37.75 miles.

(ii) *Lines Authorized for Construction*. (a) *New South Wales*. At the 30th June, 1922, the following lines had been authorized for construction but not commenced :—Gilgandra to Collie (21.51 miles); Roslyn to Taralga (15.66 miles); Grafton to South Grafton with bridge over Clarence River (2.34 miles); The Rock to Pulletp (26.00 miles); Ballina to Buyong (15.20 miles); Richmond to Kurrajong (6.68 miles); a total distance of 87.39 miles.

(b) *Victoria*. The following lines were authorized, but construction had not been commenced up to the end of June, 1922 :—5-ft. 3-in. gauge : Merbein to Yelta (10 miles); Port Fairy to Yambuk (11.50 miles); Won Wron to Woodside (9.75 miles); and Colac to Alvie (10.00 miles); an aggregate of 41.25 miles.

(c) *Queensland*. In addition to the new lines upon which work has been commenced, Parliament has also authorized the construction of the following parts of the Great Western Railway : Section A, from Quilpie to Eromanga (120 miles); Section B, from Powell's Creek (224 miles); Section C, from 37-Mile to Springvale (324 miles); and Section D, from Moonah Creek (217 miles). The following lines were also authorized for construction : Branch to Windera (12 miles); Inglewood to Texas and Silverspur (44 miles); Mount Edwards to Maryvale (28 miles); Lanefield to Rosevale (17 miles); Gatton to Mount Sylvia (11 miles); Juandah to Taroom (42 miles); Dirranbandi extension (52 miles); Yarraman to Nanango (16 miles); Brooloo to Kenilworth (10 miles); Dobbryn to Myally Creek (50 miles); Peeramon towards Boonjee (11 miles); a total of 1,178 miles.

(d) *South Australia*. Parliament has authorized the construction of lines on the 5-ft. 3-in. gauge from Paringa to Renmark, a distance of 2.50 miles, and on the 3-ft. 6-in. gauge from Kielpa to Mangalo Hall (26.25 miles). The conversion of certain 3-ft. 6-in. gauge lines in the north-west of the State to 5-ft. 3-in. gauge has also been authorized. About 175 miles of line are involved in this scheme.

(e) *Western Australia*. The following lines were authorized for construction up to the 30th June, 1922 :—Dwarda-Narrogin (33 miles), and Nyabing-Pingerup (21.75 miles), a distance of 54.75 miles.

(f) *Tasmania*. There were no railways authorized on which work had not been commenced at 30th June, 1922.

6. Cost of Construction and Equipment.—(i) *General*. The total cost of construction and equipment of the State railways at the 30th June, 1922, amounted to £233,077,006, or to an average cost of £10,709 per mile open for traffic. Particulars of the capital expenditure incurred on lines open for traffic are given in the following table :—

RAILWAYS, STATE.—MILEAGE AND COST TO 30th JUNE, 1922.

State.	Length of Line Open (Route).	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.	Mileage per 1,000 of Population.
	Miles.	£	£	£	Miles.
New South Wales (a) ..	5,116.08	83,789,871	16,378	39.01	2.38
Victoria ..	4,316.86	(b) 62,941,364	(b) 14,580	40.07	2.75
Queensland ..	5,799.33	42,519,012	7,332	54.13	7.39
South Australia (a) ..	2,357.21	(c) 19,742,821	(c) 8,376	39.09	4.67
Western Australia (a)	3,538.23	18,330,557	5,181	53.99	10.41
Tasmania ..	636.80	5,753,381	9,035	26.96	2.99
All States ..	21,764.51	(bc) 233,077,006	(bc) 10,709	41.91	3.91

(a) Exclusive of Federal railways.

(b) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).

(c) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

The lowest average cost (£5,181) per mile open is in Western Australia, and the highest (£16,378) in New South Wales, as compared with an average of £10,709 for all States. There were few costly engineering difficulties in Western Australia, and the fact that contractors were permitted to carry traffic during the term of their contracts considerably lessened the cost of construction in that State, particularly in respect of all goldfield contracts.

In the above table the figures relating to cost of construction and equipment do not include the discounts and flotation charges on loans allocated to the railways. This will explain the reason for the differences between the amounts shown above for Queensland, South Australia, and Western Australia and those shown in the Railway Reports for these States.

(ii) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of lines constructed recently is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1,750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1892 many hundreds of miles of "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2,000 to £7,500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar and the Peak, the average cost of which, to the end of June, 1922, was £3,792. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost up to 30th June, 1922, of the narrow gauge (2 ft. 6 in.) lines, having a length of 121.90 miles, was £347,575, which gives an average cost per mile of £2,851 only. In the other States, the cost of construction per mile has been similarly reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened, and the stations and siding accommodation enlarged.

(iii) *Examples of Expensive Lines.* The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days of railway construction.

RAILWAYS, STATE.—EXAMPLES OF EXPENSIVE LINES.

Line.	Gauge.	Length.			Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Lines and over.	Single Line.	Total.			
	ft. in.	Miles.	Miles.	Miles.	£	£	
NEW SOUTH WALES—							
Penrith to Bathurst ..	4 8½	97.56	16.52	114.08	5,010,131	43,916	1876
Sydney to Nowra ..	4 8½	44.28	54.15	98.43	5,114,015	51,955	1887
Homebush to Waratah ..	4 8½	95.71	..	95.71	3,627,518	37,900	1889
VICTORIA—							
Melbourne to Bendigo ..	5 3	100.89	..	100.89	5,025,067	49,807	1862
North Geelong to Ballarat ..	5 3	41.45	11.98	53.43	1,968,844	36,849	1862

The average cost per mile of the 462.54 miles comprised in the above table was £44,851, whereas the average cost of the 493.47 miles referred to in the next table was £1,891.

(iv) *Examples of Cheaply-Constructed Lines.* The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

RAILWAYS, STATE.—EXAMPLES OF CHEAPLY-CONSTRUCTED LINES.

Line.	Gauge.	Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft. in.	Miles.	£	£	
NEW SOUTH WALES—					
Parkes to Condobolin ..	4 8½	62.66	141,930	2,265	1898
Burren Junction to Pokataroo ..	4 8½	42.55	105,287	2,474	1906
VICTORIA—					
Wangaratta to Whitfield ..	2 6	30.49	41,029	1,346	1899
Wycheproof to Sea Lake ..	5 3	47.89	87,839	1,834	1895
Ultima to Chillingollah ..	5 3	20.14	35,293	1,752	1909
QUEENSLAND—					
Dalby to Bell ..	3 6	23.50	38,458	1,637	1906
Mahar to Jandowae ..	3 6	28.24	65,214	2,309	1914
Almaden to Forsayth ..	3 6	142.32	244,932	1,721	1919
SOUTH AUSTRALIA—					
Wandilo to Glencoe ..	3 6	9.13	11,740	1,287	1904
Tailem Bend to Pinnaroo ..	5 3	86.55	161,840	1,870	1906

The figures given in the two preceding tables are subject to certain limitations, inasmuch as the cost was naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (*i.e.*, exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open.

(v) *Capital Cost, All Lines.* The increase in the total capital cost of construction and equipment of Government railways for each year from 1918 to 1922 is shown in the following table :—

RAILWAYS, STATE.—CAPITAL COST OF LINES OPEN, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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TOTAL COST OF LINES OPEN.

	£	£	£	£	£	£	£
1918 ..	75,050,450	56,535,414	37,301,889	617,974,348	17,760,566	4,979,399	(a, b)209,602,066
1919 ..	76,601,591	57,403,576	38,244,494	618,649,979	17,995,941	5,076,014	(a, b)213,971,595
1920 ..	79,318,917	58,287,897	40,005,868	619,105,510	18,062,354	5,240,276	(a, b)220,020,822
1921 ..	80,756,194	59,798,696	41,368,640	619,270,704	18,169,980	5,383,192	(a, b)224,747,406
1922 ..	83,789,871	62,941,364	42,519,012	619,742,821	18,330,557	5,753,381	(a, b)233,077,006

COST PER MILE OPEN.

1918 ..	16,042	(a)13,659	7,045	(b)8,058	5,087	8,470	(a, b)10,263
1919 ..	15,877	(a)13,743	6,992	(b)8,186	5,086	8,438	(a, b)10,243
1920 ..	15,815	(a)13,832	7,037	(b)8,188	5,105	8,344	(a, b)10,275
1921 ..	16,014	(a)14,066	7,192	(b)8,259	5,135	8,547	(a, b)10,495
1922 ..	16,378	(a)14,580	7,332	(b)8,376	5,181	9,035	(a, b)10,709

(a) Exclusive of cost of line from Murrayville to South Australian border (12.53 miles).

(b) Exclusive of cost of line from Mount Gambier to Victorian border (11.79 miles).

(vi) *Loan Expenditure.* The subjoined table shows the total loan expenditure on Government railways (including lines both open and unopen) in each State, except Tasmania, and on Government railways and tramways in the latter State for the years 1918 to 1922 :—

RAILWAYS, STATE.—LOAN EXPENDITURE, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. (a)	All States.
	£	£	£	£	£	£	£
1918 ..	2,294,547	761,705	984,147	500,441	181,394	55,561	4,777,795
1919 ..	1,441,105	878,384	1,416,302	324,041	154,720	39,165	4,253,717
1920 ..	2,387,303	982,182	2,356,498	236,925	93,676	91,221	6,147,805
1921 ..	3,598,351	1,685,329	1,760,932	252,097	145,724	254,079	7,696,512
1922 ..	4,399,725	3,478,021	1,226,280	572,482	323,296	490,990	10,490,794

(a) Including tramways.

The following statement shows the total loan expenditure on railways to the 30th June, 1922 :—

RAILWAYS, STATE.—TOTAL LOAN EXPENDITURE TO 30th JUNE, 1922.

State ..	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.a	All States.
	£	£	£	£	£	£	£
Expenditure	91,884,734	61,668,618	45,794,950	22,024,413	17,910,019	6,342,055	245,624,789

(a) Including tramways.

7. **Gross Revenue.**—(i) *General.* The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run during each financial year from 1918 to 1922 inclusive :—

RAILWAYS, STATE.—GROSS REVENUE, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1918 ..	8,954,880	6,562,259	4,023,921	2,331,549	1,816,388	356,735	24,045,732
1919 ..	9,958,173	6,432,277	3,984,597	2,391,409	1,872,897	401,364	25,040,717
1920 ..	13,083,847	8,224,972	4,960,150	2,726,540	2,291,876	506,177	31,793,562
1921 ..	14,267,205	9,795,763	5,279,412	2,942,028	2,720,032	600,045	35,604,485
1922 ..	15,213,019	10,791,082	5,154,530	3,297,347	2,827,856	588,297	37,872,131

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1918 ..	1,968	1,585	762	1,043	525	604	1,166
1919 ..	2,102	1,547	748	1,047	534	670	1,215
1920 ..	2,635	1,961	880	1,177	648	797	1,494
1921 ..	2,843	2,312	921	1,261	768	942	1,656
1922 ..	2,996	2,522	891	1,406	799	927	1,749

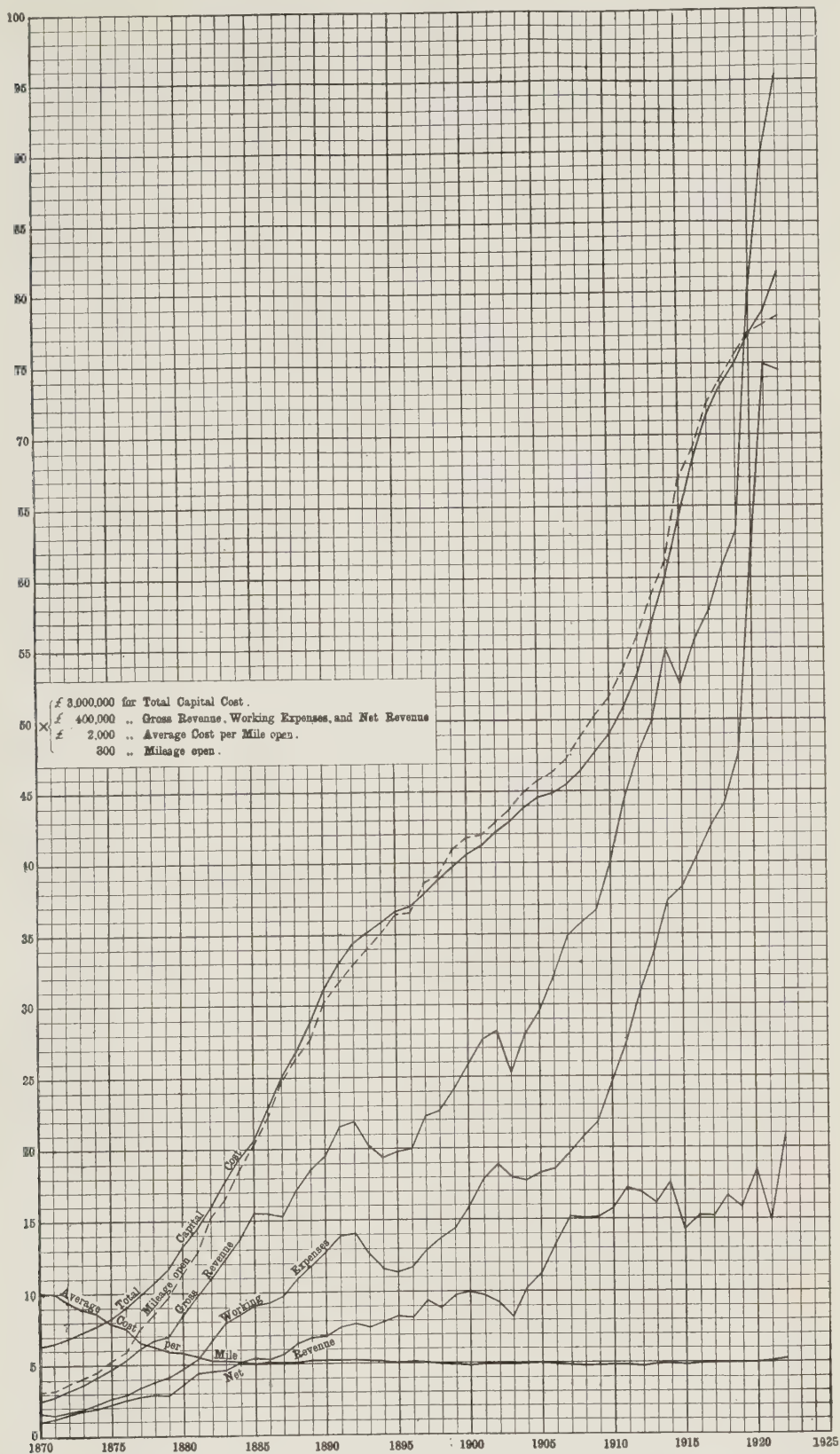
GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1918 ..	118.46	115.58	93.58	102.85	106.47	81.05	109.55
1919 ..	119.88	118.46	96.18	106.03	105.60	86.95	111.94
1920 ..	137.51	131.40	113.99	126.03	113.38	95.91	127.80
1921 ..	150.23	151.35	118.02	123.60	132.74	103.79	139.90
1922 ..	166.82	163.33	128.40	140.56	148.68	98.51	150.04

The amounts of revenue earned per average mile worked and per train-mile run in respect of (a) coaching and (b) goods and live stock traffic, separately, are given elsewhere.



FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF AUSTRALIA, 1870 TO 1922.



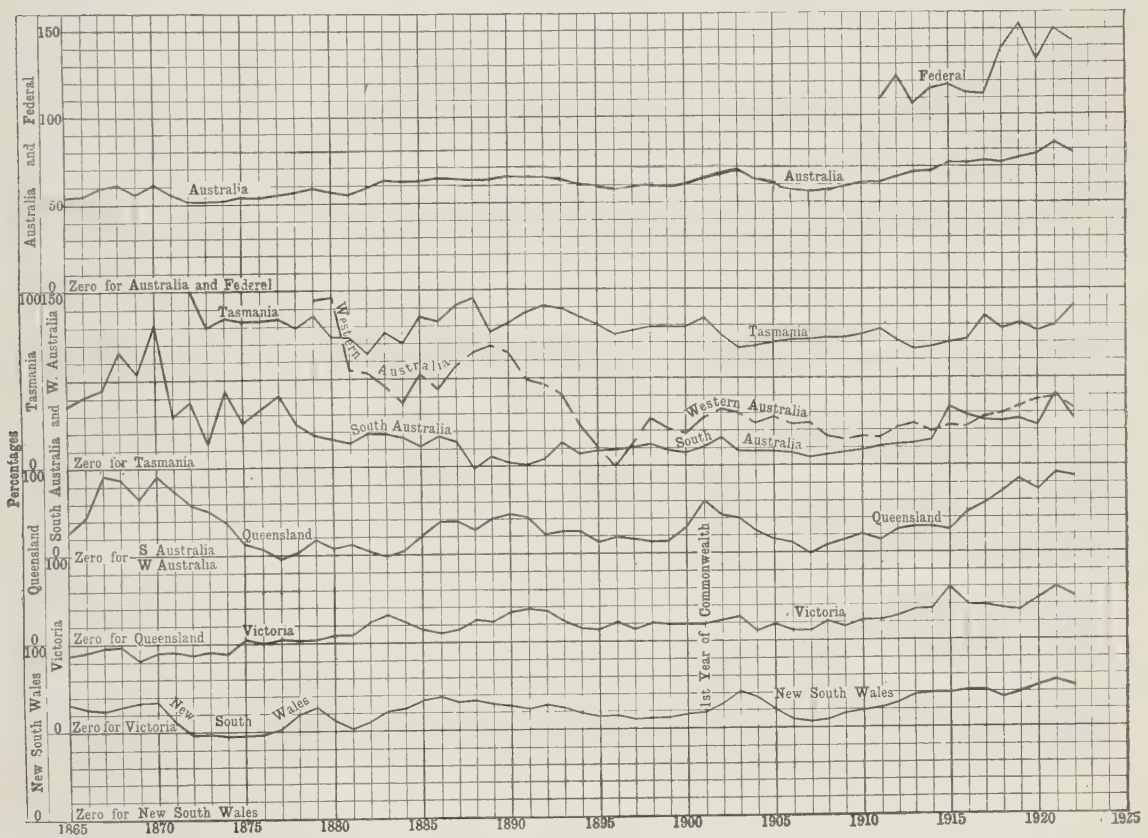
(See page 320.)

EXPLANATION.—The base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the curve for the total capital cost, the vertical side of each square represents £3,000,000.

In the curves for (i) gross revenue, (ii) working expenses, and (iii) net revenue, the vertical height of each small square represents £400,000. For the curve of average cost per mile open, the vertical side of each small square represents £2,000. The mileage open is shown by a dotted curve, the vertical side of each square representing 300 miles.

PERCENTAGES OF WORKING EXPENSES ON GROSS REVENUE OF GOVERNMENT
RAILWAYS, 1865 TO 1922.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent, the heavy zero lines being different for each State and Australia, with, however, two exceptions, the zero lines for South Australia and Western Australia being identical, as is also the case with the zero line for Australia and Federal.

PERCENTAGES OF NET REVENUE ON CAPITAL COST OF GOVERNMENT RAILWAYS,
1865 TO 1922.



EXPLANATION.—The base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and Australia being different, but the zero line for Federal is the same as that for Australia.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

(ii) *Coaching, Goods, and Miscellaneous Receipts.* (a) *Totals.* The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock; and (c) rents and miscellaneous items. The subjoined table shows the gross revenue for 1918 to 1922, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph.

RAILWAYS, STATE.—COACHING, GOODS, ETC., RECEIPTS, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
COACHING TRAFFIC RECEIPTS.							
	£	£	£	£	£	£	£
1918 ..	3,932,936	3,254,274	1,396,803	819,197	617,606	177,854	10,198,670
1919 ..	3,978,180	3,241,194	1,392,476	807,747	637,851	188,329	10,245,777
1920 ..	5,714,131	4,205,420	1,833,349	1,130,659	764,872	236,763	13,885,194
1921 ..	6,384,031	4,897,258	1,885,677	1,185,878	911,007	270,635	15,534,486
1922 ..	6,636,530	5,376,620	1,898,050	1,240,354	973,153	263,340	16,388,047

GOODS AND LIVE STOCK TRAFFIC RECEIPTS.

	£	£	£	£	£	£	£
1918 ..	4,652,113	3,137,547	2,516,564	1,480,469	1,105,836	168,095	13,060,624
1919 ..	5,583,982	2,957,789	2,483,698	1,536,209	1,127,539	203,412	13,892,629
1920 ..	6,807,792	3,721,122	3,000,829	1,556,224	1,394,908	261,657	16,742,532
1921 ..	7,270,856	4,411,276	3,267,289	1,719,556	1,637,979	320,798	18,627,754
1922 ..	7,953,909	4,815,056	3,105,485	2,000,716	1,688,482	312,890	19,876,538

MISCELLANEOUS RECEIPTS.

	£	£	£	£	£	£	£
1918 ..	369,831	170,438	110,554	31,883	92,946	10,786	786,438
1919 ..	396,011	233,294	108,423	47,453	107,507	9,623	902,311
1920 ..	561,924	298,430	125,972	39,657	132,096	7,757	1,165,836
1921 ..	612,318	487,229	126,446	36,594	171,046	8,612	1,442,245
1922 ..	622,580	599,406	150,995	56,277	166,221	12,067	1,607,546

(b) *New South Wales.* The increase in revenue over 1921 is due to the higher rates and fares which came into operation in November, 1920. In the previous year only eight months' operations were affected by the increase in rates.

(c) *Victoria.* The increased fares and rates from 1st January, 1921, were operative over the whole year as against only six months of the previous year. This fact, together with the increased traffic on suburban lines and the revenue from the sale of electric power, was responsible for the increased revenue in this State.

(d) *Queensland.* A reduction of 20 per cent. on freight rates for cattle, sheep, pigs, and dairy produce which was made in March, 1922, to assist the pastoral and dairying industries over a period of depression was mainly the cause of a decrease in revenue over the previous year.

(e) *South Australia.* Consequent on the re-opening of the Port Pirie smelters a very substantial increase in the carriage of ores from Broken Hill resulted. This was the principal reason for an increase of revenue over the year 1921.

(f) *Western Australia.* As compared with the previous year the receipts from all sources except carriage of live stock, jetties, and miscellaneous showed an increase. The decrease in live stock receipts is attributable to the drought conditions in the Murchison and Gascoyne districts.

(g) *Tasmania.* Although the passenger journeys showed an increase of 163,038 over the previous year, the receipts from this source decreased by £5,111. A very appreciable falling off in the goods and live stock traffic accentuated the decrease of revenue over the previous year.

(b) *Percentages.* The following table shows for the two years 1920-21 and 1921-22 the percentage which each class of receipts bears to the total gross revenue :—

RAILWAYS, STATE.—PERCENTAGES OF RECEIPTS, 1921 AND 1922.

State.	1921.			1922.		
	Coaching.	Goods and Live Stock.	Miscellaneous.	Coaching.	Goods and Live Stock.	Miscellaneous.
	%	%	%	%	%	%
New South Wales ..	44.75	50.96	4.29	43.63	52.28	4.09
Victoria ..	49.99	45.03	4.98	49.83	44.62	5.55
Queensland ..	35.72	61.89	2.39	36.82	60.25	2.93
South Australia ..	40.31	58.45	1.24	37.62	60.67	1.71
Western Australia ..	33.49	60.22	6.29	34.41	59.71	5.88
Tasmania ..	45.10	53.46	1.44	44.76	53.19	2.05
All States ..	43.63	52.32	4.05	43.27	52.48	4.25

(c) *Averages for Coaching Traffic Receipts.* The subjoined table shows the receipts from coaching traffic per average mile of line worked, and per passenger-train mile, in each State for the year ended the 30th June, 1922 :—

RAILWAYS, STATE.—COACHING TRAFFIC RECEIPTS, AVERAGES, 1922.

State.		Number of Passenger-Train-Miles.	Coaching Traffic Receipts.		
			Gross.	Per Average Mile Worked.	Per Passenger-Train-Mile.
			£	£	d.
New South Wales ..	..	11,378,832	6,636,530	1,307	139.98
Victoria ..	..	9,865,214	5,376,620	1,256	130.80
Queensland ..	..	3,702,325	1,898,050	328	123.04
South Australia ..	..	2,748,703	1,240,354	529	108.30
Western Australia ..	..	1,875,871	973,153	275	124.51
Tasmania ..	..	662,272	263,340	415	95.43
All States ..	..	30,233,217	16,388,047	756	130.09

(d) *Averages for Goods and Live Stock Traffic.* The following table shows the gross receipts from goods and live stock traffic per mile worked, per goods-train-mile, and per ton carried, for the year ended the 30th June, 1922 :—

RAILWAYS, STATE.—GOODS AND LIVE-STOCK TRAFFIC RECEIPTS, AVERAGES, 1922.

State.	Number of Goods-Train-Miles.	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train-Mile.	Per Ton Carried.
			£	£	d.	d.
New South Wales ..	10,508,233	14,197,055	7,953,909	1,567	181.66	134.46
Victoria ..	5,991,601	7,491,031	4,815,056	1,125	192.87	154.27
Queensland ..	5,932,207	3,732,413	3,105,485	537	125.64	199.69
South Australia ..	2,881,254	2,827,681	2,000,716	853	166.65	169.81
Western Australia ..	2,688,760	2,548,258	1,688,482	477	150.71	159.02
Tasmania ..	770,827	621,751	312,890	493	97.42	120.78
All States ..	28,772,882	31,418,189	19,876,538	917	165.79	151.83

8. **Working Expenses.**—(i) *General.* In order to make an adequate comparison of the working expenses, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little backloading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure. Reference has already been made to the agreement arrived at by the Conference of Railway Accountants.

The following table shows the total annual expenditure and the percentage of the total of these expenses upon the corresponding gross revenues in each State for each year 1918 to 1922 :—

RAILWAYS, STATE.—WORKING EXPENSES, 1918 TO 1922.

Year ended 30th June.—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL WORKING EXPENSES.							
	£	£	£	£	£	£	£
1918	5,940,447	4,451,092	3,410,157	1,747,055	1,451,334	277,952	17,278,037
1919	6,904,450	4,279,663	3,690,445	1,829,634	1,567,591	324,595	18,596,378
1920	9,570,983	6,058,912	4,323,392	2,007,361	2,000,473	390,191	24,351,312
1921	11,032,677	7,835,756	5,048,498	2,655,465	2,422,004	476,187	29,470,587
1922	11,116,302	8,026,665	4,810,362	2,537,110	2,328,843	538,066	29,357,348

PERCENTAGE OF WORKING EXPENSES ON GROSS REVENUE.

	%	%	%	%	%	%	%
1918	66.34	67.83	84.75	74.93	79.90	77.92	71.85
1919	69.33	66.53	92.62	76.51	83.70	80.87	74.26
1920	73.15	73.66	87.16	73.62	87.29	77.08	76.59
1921	77.33	79.99	95.63	90.26	89.04	79.35	82.77
1922	73.07	74.38	93.32	76.94	82.35	91.46	77.52

(a) *New South Wales.* The increase in working expenses over 1921 was due to greater expenditure on materials and also on wages consequent on the reduction of the hours of duty from 48 to 44 hours per week in the case of certain sections of the staff.

(b) *Victoria.* The increased rates of salaries which were in operation for the whole year as against six months only in the year 1921 were principally responsible for an increase of £493,161 in working expenses. Certain economies which were effected in the several branches reduced this increase to £190,909.

(c) *Queensland.* The decrease in working expenses over the previous year—notwithstanding that damage by floods involved an expenditure of approximately £50,000—was attributable to a reduction in the number of train-miles run and also to economics effected in several branches.

(d) *South Australia.* A decrease in the train-mileage of 82,534 miles was partly responsible for the reduced working expenses compared with the previous year. The principal decrease occurred in the expenses of the maintenance of ways and works, though increases in the cost of materials prevented a still greater reduction of working expenses.

(e) *Western Australia.* The cost of the Traffic Branch showed a decrease of £67,019 as contrasted with the previous year. This is brought about mainly by a reduction of 353,482 train-miles.

(f) *Tasmania.* The increase of £61,879 in the working expenses as compared with the previous year was ascribed to increases of salaries and wages and the higher cost of stores and other material.

(g) *All States.* In each State the percentages of the working expenses on the gross earnings during the last five years generally reached the maximum in 1920–21. In the last year, with the exception of Tasmania, there has been a general decline.

The variation in the percentage of working expenses on the gross revenue in each State for the years 1865 to 1922 is illustrated in the graph which accompanies this chapter.

(ii) *Averages.* The following table shows the working expenses per average mile worked and per train-mile run in each State for the years 1918 to 1922 :—

RAILWAYS, STATE.—WORKING EXPENSES, AVERAGES, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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WORKING EXPENSES PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£
1918	1,305	1,075	646	782	419	470	838
1919	1,457	1,029	693	801	447	542	902
1920	1,927	1,445	767	867	565	614	1,144
1921	2,198	1,849	881	1,138	684	748	1,371
1922	2,189	1,876	832	1,082	658	848	1,356

WORKING EXPENSES PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1918	78.58	78.40	79.31	77.07	85.07	63.15	78.72
1919	83.12	78.82	89.08	81.12	88.39	70.32	83.13
1920	100.59	96.80	99.35	92.79	98.96	73.93	98.04
1921	116.17	118.21	112.86	111.56	118.19	82.37	115.10
1922	121.89	121.49	119.83	108.15	122.45	90.11	119.41

The working expenses per average mile worked for all States for the year 1922 increased by £518 over the year 1918, but at the same time it must be taken into consideration that the gross revenue shows a still greater increase, viz., £583. The working expenses per train-mile run increased during the same period by 40.69d., while the gross revenue rose by 40.49d.

(iii) *Distribution.* The subjoined table shows the distribution of working expenses, under four chief heads of expenditure, for the years 1918 to 1922 :—

RAILWAYS, STATE.—DISTRIBUTION OF WORKING EXPENSES, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
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MAINTENANCE.

	£	£	£	£	£	£	£
1918	996,502	1,049,270	851,525	304,462	371,411	72,515	3,645,685
1919	1,126,118	870,123	904,199	338,785	411,986	87,902	3,739,113
1920	1,589,472	1,288,030	988,881	350,953	485,647	100,276	4,803,259
1921	1,808,531	1,576,857	1,153,095	526,120	561,845	122,349	5,748,797
1922	1,940,794	1,708,539	1,162,367	400,541	557,091	152,168	5,921,500

LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES.

1918	2,755,183	2,042,846	1,515,121	982,298	656,576	125,190	8,077,214
1919	3,277,623	2,019,967	1,650,263	981,646	689,333	149,260	8,768,092
1920	4,603,775	2,785,614	2,000,901	1,101,629	927,139	185,576	11,604,634
1921	5,466,880	3,541,967	2,374,560	1,414,866	1,095,300	229,154	14,122,727
1922	5,474,485	3,426,370	2,165,438	1,417,305	1,074,460	239,158	13,797,216

TRAFFIC EXPENSES.

1918	1,727,861	1,225,479	974,513	426,775	379,991	63,728	4,798,347
1919	1,927,612	1,257,685	1,067,667	459,147	418,050	72,514	5,202,675
1920	2,535,813	1,820,588	1,251,192	495,700	529,802	87,786	6,720,881
1921	3,027,041	2,246,443	1,428,008	651,579	688,077	109,521	8,150,669
1922	2,993,601	2,395,694	1,387,425	660,202	621,058	125,038	8,183,018

OTHER CHARGES.

1918	460,901	133,497	68,998	33,520	43,356	16,519	756,791
1919	573,097	131,888	68,316	50,056	48,222	14,919	886,498
1920	841,923	164,680	82,418	59,079	57,885	16,553	1,222,538
1921	730,225	470,489	92,835	62,900	76,782	15,163	1,448,394
1922	707,422	496,062	95,132	59,062	76,234	21,702	1,455,614

In New South Wales and Victoria the expenditure in connexion with refreshment rooms is included in " Other Charges " for the whole five years in the case of the former State, and from 1920 inclusive in the case of Victoria.

9. **Net Revenue.**—(i) *Net Revenue and Percentage on Capital Cost.* The following table shows the net sums available to meet interest charges, also the percentage of such sums upon the capital cost of construction and equipment of lines opened for traffic in each State for the years 1918 to 1922 :—

RAILWAYS, STATE.—NET REVENUE AND PERCENTAGE OF NET REVENUE ON CAPITAL COST OF LINES OPEN, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
NET REVENUE.							
	£	£	£	£	£	£	£
1918	3,014,433	2,111,167	613,764	584,494	365,054	78,783	6,767,695
1919	3,053,723	2,152,614	294,152	561,775	305,306	76,769	6,444,339
1920	3,512,863	2,166,060	636,758	719,180	291,403	115,986	7,442,250
1921	3,234,528	1,960,007	230,914	286,563	298,028	123,858	6,133,898
1922	4,096,717	2,764,417	344,168	760,237	499,013	50,231	8,514,783

PERCENTAGE OF NET REVENUE ON CAPITAL EXPENDITURE.

	%	%	%	%	%	%	%
1918	4.02	3.73	1.65	3.25	2.06	1.58	3.23
1919	3.99	3.75	0.77	3.01	1.70	1.51	3.01
1920	4.43	3.72	1.59	3.76	1.61	2.21	3.38
1921	3.93	3.27	0.56	1.48	1.64	2.30	2.72
1922	4.89	4.39	0.81	3.85	2.72	0.87	3.65

These figures are also represented in the graphs which accompany this chapter.

The percentage of net revenue on capital expenditure for all States during the past five years reached its maximum during the year 1921–22, with a return of 3.65. This was, however, insufficient to meet interest payable, for which particulars are included in the following paragraph.

(ii) *Net Revenue Averages.* Tables showing the gross earnings and the working expenses per average mile worked and per train-mile run have been given previously. The net earnings, *i.e.*, the excess of gross earnings over working expenses per average mile worked and per train-mile run are shown in the following table :—

RAILWAYS, STATE.—NET REVENUE AVERAGES, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
NET REVENUE PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1918	663	510	116	261	105	133	328
1919	645	518	55	246	87	128	313
1920	708	516	113	311	82	183	350
1921	645	463	40	123	84	194	286
1922	807	646	59	324	141	79	393

NET REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.
1918	39.88	37.18	14.27	25.78	21.40	17.90	30.83
1919	36.76	39.64	7.10	24.91	17.21	16.63	28.81
1920	36.92	34.61	14.63	33.24	14.42	21.97	29.96
1921	34.06	29.56	5.16	12.04	14.55	21.42	23.95
1922	44.93	41.84	8.57	32.41	26.23	8.41	30.63

The substantial increases in the net revenue per average mile worked and per train-mile run are due to the causes mentioned in dealing with the increased gross revenue and decreased working expenses.

10. Profit or Loss.—The net revenue after payment of working expenses is shown in the previous subsection. The following table shows the amount of interest payable on expenditure from loans on the construction and equipment of the railways, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment :—

RAILWAYS, STATE.—PROFIT OR LOSS, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE.

	£	£	£	£	£	£	£
1918	3,043,349	2,120,547	1,559,136	716,234	654,059	183,977	8,277,302
1919	3,265,540	2,157,798	1,617,404	747,671	665,100	186,402	8,639,915
1920	3,641,988	2,225,881	1,723,760	789,362	690,618	197,587	9,269,196
1921	3,811,560	2,401,132	1,811,974	847,867	716,398	205,765	9,794,696
1922	4,217,881	2,580,001	1,924,375	905,319	756,737	228,488	10,612,801

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.

	£	£	£	£	£	£	£
1918	— 28,916	— 9,380	— 945,372	— 131,740	— 289,005	— 105,194	— 1,509,607
1919	— 211,817	— 5,184	— 1,323,252	— 185,896	— 359,794	— 109,633	— 2,195,576
1920	— 129,125	— 59,821	— 1,087,001	— 70,182	— 399,215	— 81,601	— 1,826,945
1921	— 577,032	— 441,125	— 1,581,060	— 561,304	— 418,370	— 81,907	— 3,660,798
1922	— 121,164	+ 184,416	— 1,580,207	— 145,082	— 257,724	— 178,257	— 2,098,018

PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.

	%	%	%	%	%	%	%
1918	—0.03	—0.02	—2.53	—0.73	—1.63	—2.11	—0.72
1919	—0.28	—0.01	—3.46	—1.00	—2.00	—2.16	—1.03
1920	—0.16	—0.10	—2.71	—0.36	—2.21	—1.55	—0.83
1921	—0.70	—0.74	—3.82	—2.91	—2.30	—1.52	—1.62
1922	—0.15	+0.29	—3.72	—0.74	—1.41	—3.10	—0.90

— Indicates a loss.

The losses during the last five years in all the States are due to the causes to which allusion has already been made in the remarks as to increases in the working expenses. It will be observed in the preceding table that the interest charges in 1922 were £2,335,499 higher than they were in 1918, in which year the rate was 3.95 per cent. as against 4.55 per cent. in 1922.

11. Traffic.—(i) *General.* Reference has already been made to the difference in the traffic conditions on many of the lines. These conditions differ not only in the several States, but also on different lines in the same States, and apply to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light, as the density of population diminishes rapidly as the coastal regions are left behind with a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

The following table gives particulars for the years 1918 to 1922 :—

RAILWAYS, STATE.—TRAFFIC, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
1918	94,304,516	105,753,073	25,682,368	18,936,104	16,081,695	1,874,029	262,631,785
1919	98,568,768	111,904,786	26,414,817	20,176,544	17,325,424	1,889,102	276,279,441
1920	114,654,660	134,012,162	28,177,817	22,852,116	18,411,231	2,267,856	320,375,842
1921	120,735,140	134,045,683	27,735,179	23,787,884	17,732,571	2,687,837	326,724,294
1922	121,298,861	142,456,924	27,155,606	23,316,141	17,895,509	2,757,702	334,880,743

NUMBER OF PASSENGER JOURNEYS.

1918	94,304,516	105,753,073	25,682,368	18,936,104	16,081,695	1,874,029	262,631,785
1919	98,568,768	111,904,786	26,414,817	20,176,544	17,325,424	1,889,102	276,279,441
1920	114,654,660	134,012,162	28,177,817	22,852,116	18,411,231	2,267,856	320,375,842
1921	120,735,140	134,045,683	27,735,179	23,787,884	17,732,571	2,687,837	326,724,294
1922	121,298,861	142,456,924	27,155,606	23,316,141	17,895,509	2,757,702	334,880,743

PER 100 OF MEAN POPULATION.

1918	5,028	7,524	3,810	4,381	5,212	942	5,365
1919	5,107	7,821	3,804	4,527	5,527	904	5,492
1920	5,651	8,907	3,837	4,835	5,512	1,042	6,054
1921	5,732	8,720	3,627	4,782	5,322	1,260	5,992
1922	5,645	9,067	3,469	4,606	5,272	1,283	6,020

PER AVERAGE MILE OF LINE WORKED.

1918	20,722	25,551	4,863	8,473	4,644	3,171	12,963
1919	20,808	26,907	4,961	8,830	4,940	3,154	13,404
1920	23,087	31,953	5,003	9,867	5,203	3,570	15,052
1921	24,058	31,639	4,838	10,195	5,012	4,220	15,199
1922	23,892	33,290	4,695	9,945	5,059	4,345	15,462

TONNAGE OF GOODS AND LIVE STOCK CARRIED.

1918	11,293,060	6,231,093	4,154,441	2,767,734	2,259,070	407,405	27,112,803
1919	12,714,012	6,515,470	3,783,334	2,618,510	2,379,403	472,926	28,483,655
1920	13,293,528	7,770,694	3,790,881	2,578,908	2,613,606	575,169	30,622,786
1921	15,563,131	7,572,993	3,867,650	2,682,218	2,604,068	672,127	32,962,187
1922	14,197,055	7,491,031	3,732,413	2,827,681	2,548,258	621,751	31,418,189

PER 100 OF MEAN POPULATION.

1918	602	443	616	640	732	205	554
1919	659	455	545	587	759	226	566
1920	655	516	516	546	782	264	579
1921	739	493	506	539	782	315	605
1922	661	477	477	559	751	289	565

PER AVERAGE MILE OF LINE WORKED.

1918	2,481	1,505	787	1,238	652	689	1,338
1919	2,684	1,567	711	1,146	678	790	1,382
1920	2,676	1,852	672	1,113	738	905	1,438
1921	3,101	1,787	675	1,150	736	1,055	1,533
1922	2,796	1,751	645	1,206	720	980	1,451

The tonnage of goods and live stock quoted above for New South Wales does not include 335,756 tons of coal on which shunting and haulage charges only were collected.

(ii) *Metropolitan and Country Passenger Traffic and Revenue.* A further indication of the difference in passenger traffic conditions is obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales, Victoria, and South Australia. The subjoined table shows the number of metropolitan and country passengers carried in each of the States mentioned and the revenue from the traffic during the year 1921-22 :—

**RAILWAYS, STATE.—METROPOLITAN, SUBURBAN, AND COUNTRY
PASSENGER TRAFFIC AND RECEIPTS, 1921-22.**

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
				£	£	£
N.S.W. . .	a110,921,845	10,377,016	121,298,861	2,182,030	3,752,586	5,934,616
Victoria . .	b132,646,198	9,810,726	142,456,924	2,142,346	2,672,474	4,814,820
South Australia c	21,188,793	2,127,348	23,316,141	394,897	659,381	1,054,278

(a) Within 34 miles of Sydney and Newcastle, including the Richmond line.
of Melbourne.

(c) Within 25 miles of Adelaide.

(b) Within 20 miles

The number of passenger journeys in country districts in Victoria was less than the corresponding number in New South Wales, while, on the other hand, the number of metropolitan passenger journeys in Victoria was greater than in New South Wales. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne and Adelaide. In addition, the Sydney suburban transport facilities are considerably augmented by motor omnibus services and ferry services. These are dealt with in the paragraphs allocated to motor vehicles and shipping.

(iii) *Electrification of Melbourne Suburban Railways.* The electrification of the Melbourne Suburban Railways which has been in progress during the last ten years was completed in April, 1923.

The scheme comprised the electrification of 143 route-miles of steam-operated railway, including sidings, and the conversion and construction of the necessary rolling stock. Particulars of the lines concerned were given in Year Book No. 15, p. 564.

(iv) *Country Lines.* As the traffic on main country lines develops, it is intended to convert to electric traction busy sections which are within reasonable distance of a cheap power supply, and investigations are being made in order to determine which lines offer prospects of financial success.

(v) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried, and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried are available for all the States, and the following table shows the number of tons of various representative commodities carried, with the percentage of each class on the total for the financial year 1921-22 :—

RAILWAYS, STATE.—CLASSIFICATION OF COMMODITIES CARRIED, 1921-22.

State.	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
TONS CARRIED.								
New South Wales	Tons. a7,155,245	Tons. 185,391	Tons. c1,651,994	Tons. 389,609	Tons. 128,085	Tons. 603,067	Tons. 4,083,664	Tons. 14,197,055
Victoria ..	51,459,681	618,706	1,690,828	319,378	84,136	467,174	2,851,128	7,491,031
Queensland ..	895,256	247,066	d 41,140	f 464,412	77,334	291,731	1,715,474	3,732,413
South Australia	958,712	186,541	672,736	84,271	33,307	119,617	772,497	2,827,681
Western Australia	246,227	464,781	500,503	99,462	19,526	78,505	1,139,254	2,548,258
Tasmania ..	172,955	57,979	e	46,649	3,025	20,165	320,978	621,751
All States ..	10,888,076	1,760,464	4,557,201	1,403,781	345,413	1,580,259	10,882,995	31,418,189

PERCENTAGE ON TOTAL TONNAGE CARRIED.

	%	%	%	%	%	%	%	%
New South Wales	50.40	1.31	11.64	2.74	0.90	4.25	28.76	100.00
Victoria ..	19.49	8.26	22.57	4.26	1.12	6.24	38.06	100.00
Queensland ..	23.99	6.62	1.10	12.44	2.07	7.82	45.96	100.00
South Australia	33.90	6.60	23.79	2.98	1.18	4.23	27.32	100.00
Western Australia	9.66	18.24	19.64	3.90	0.77	3.08	44.71	100.00
Tasmania ..	27.82	9.33	e	7.50	0.49	3.24	51.62	100.00
All States ..	34.66	5.60	14.50	4.47	1.10	5.03	34.64	100.00

(a) Exclusive of 335,756 tons of coal on which only shunting and haulage were collected. (b) Coal, stone, gravel, and sand. (c) Up journey only (to coast). (d) Flour only. (e) Included in all other commodities. (f) Sugar-cane.

Corresponding information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connexion it may be stated that the following resolution was passed at the Inter-State Conference of Railway Commissioners held in Melbourne in May, 1909 :—" That in view of the variations in the character and classification of the goods traffic in the different States, the subdivisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

(vi) *Parcels Traffic.* In Victoria two electric motor coaches have been constructed and put into operation for the transfer of parcels from the central stations to suburban stations, and also to convey luggage and parcels between the two main terminal stations. These coaches, which run to a fixed schedule, are the nucleus of a fleet which will eventually separate the whole of the parcels traffic from the passenger traffic on the suburban system.

12. *Passenger-Mileage and Ton-Mileage.*—(i) *General.* In earlier issues of the Year Book reference has been made to the resolution on the subject of passenger-mileage and ton-mileage statistics passed at the Inter-State Conference of Railway Commissioners held in Melbourne in May, 1909; and to the Report [Cd. 4697] on the same subject by a Committee appointed by the President of the Board of Trade in the United Kingdom (see Year Book No. 10, p. 654).

(ii) *Passenger-Miles.* The subjoined table gives particulars of passenger-mileage in respect of the States of New South Wales, Victoria, South Australia, and Tasmania for the years 1917-18 to 1921-22. The average number of passengers carried per "train" is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." Similarly, the "density of traffic" is obtained by dividing the number of "passenger-miles" by the "average miles worked."

RAILWAYS, STATE.—SUMMARY OF "PASSENGER-MILES," 1918 TO 1922.

Year ended 30th June—	Passenger-Train-Mileage.	Number of Passenger Journeys.	Total Passenger-Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger Journey.	Average Earnings per Passenger-Mile.	Average Fare per Passenger Journey.	Density of Traffic per Average Mile Worked.
	Miles. (,000 omitted.)	No. (,000 omitted.)	No. (,000 omitted.)	£	No.	Miles.	d.	d.	No.
NEW SOUTH WALES.									
1918	9,441	94,305	1,384,766	3,473,340	151	14.67	0.60	8.84	304,277
1919	9,689	98,569	1,367,691	3,533,869	144	13.88	0.62	8.60	288,725
1920	11,136	114,655	1,632,627	5,137,247	151	14.24	0.74	10.75	328,761
1921	11,301	120,735	1,620,857	5,736,256	147	13.42	0.85	11.57	322,976
1922	11,379	121,299	1,610,619	5,934,616	145	13.27	0.88	11.74	320,936
VICTORIA.									
1918	7,699	105,753	939,788	2,892,556	122	8.89	0.74	6.56	227,057
1919	5,308	111,905	1,012,955	2,894,409	131	9.05	0.69	6.21	243,557
1920	6,655	134,012	1,239,022	3,780,251	148	9.25	0.73	6.77	295,427
1921	8,822	134,046	1,205,052	4,398,124	138	8.99	0.88	7.87	284,412
1922	9,865	142,457	1,231,828	4,814,820	125	8.65	0.94	8.11	287,777
SOUTH AUSTRALIA.									
1918	2,597	18,936	234,197	703,221	90	12.37	0.72	8.91	104,786
1919	2,644	20,177	238,845	703,748	90	11.84	0.71	8.37	104,527
1920	2,576	22,852	305,834	979,596	119	13.38	0.77	10.29	132,052
1921	2,815	23,788	280,904	1,019,480	100	11.81	0.87	10.29	120,438
1922	2,749	23,330	268,558	1,045,530	102	11.51	0.93	10.76	115,110
TASMANIA.									
1918	448	1,874	40,385	151,874	90	21.55	0.90	19.45	68,324
1919	448	1,889	39,961	167,035	89	21.15	1.00	21.22	67,713
1920	472	2,268	46,015	209,866	97	20.29	1.09	22.21	72,465
1921	494	2,688	50,263	238,719	102	18.70	1.14	21.31	78,905
1922	662	2,758	46,550	233,608	70	16.88	1.15	20.33	73,336

The difference in the number of passenger journeys given in this table and that in connexion with traffic in respect of the State of South Australia is accounted for by the fact that the latter table is compiled from the receipts from passenger traffic while the former is based on the passenger traffic carried.

(iii) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each of the years 1917-18 to 1921-22 for the States of New South Wales, Victoria, South Australia, and Tasmania. For the State of Western Australia corresponding particulars are not available for the years 1913 to 1917 inclusive. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the "goods-train-mileage" in the second column, except in respect of New South Wales for the year 1922 and Victoria for the years 1920 to 1922, in which instances the Railways Departments concerned have supplied the information.

RAILWAYS, STATE.—SUMMARY OF "TON-MILES," 1918 TO 1922.

Year ended the 30th June	Goods-Train-Mileage.	Total Tons Carried.	Total "Ton-miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-mile."	Density of Traffic per Average Mile Worked.
	No. (,000 omitted.)	No. (,000 omitted.)	No (,000 omitted.)	£	Tons.	Miles.	d.	Tons.

NEW SOUTH WALES.

1918	8,703	11,094	1,044,437	4,051,655	120.02	94.14	0.93	229,496
1919	10,246	12,469	1,237,806	4,889,343	120.80	99.27	0.95	261,306
1920	11,698	13,010	1,394,099	6,106,563	119.17	107.15	1.05	280,729
1921	11,491	15,262	1,418,386	6,501,914	123.44	92.94	1.10	282,631
1922	10,508	14,197	1,365,961	7,953,910	154.43	96.21	1.38	269,049

VICTORIA.

1918	5,928	6,231	601,445	3,137,547	101.47	96.52	1.25	145,312
1919	5,308	6,515	487,083	2,957,789	91.76	74.76	1.46	117,115
1920	6,655	7,771	631,374	3,721,122	94.88	81.25	1.41	150,542
1921	6,711	7,573	727,930	4,411,276	137	96.12	1.45	171,803
1922	5,992	7,491	684,887	4,815,056	143	91.43	1.69	160,058

SOUTH AUSTRALIA.

1918	2,844	2,768	270,104	1,480,469	94.99	97.59	1.32	120,852
1919	2,769	2,619	263,984	1,536,209	95.33	100.81	1.40	115,529
1920	2,616	2,579	196,534	1,556,224	75.13	76.21	1.90	84,859
1921	2,897	2,682	217,879	1,719,556	75.20	81.23	1.81	93,383
1922	2,881	2,828	284,269	2,000,716	98.66	100.53	1.68	121,253

WESTERN AUSTRALIA.

1918	2,747	2,542	184,748	1,154,087	67.25	72.67	1.49	77,767
1919	2,485	2,379	173,283	1,127,539	69.73	72.83	1.56	49,411
1920	2,873	2,614	207,384	1,394,908	72.18	79.34	1.61	58,616
1921	2,865	2,604	200,379	1,637,979	69.95	76.95	1.96	56,633
1922	2,689	2,548	208,347	1,688,482	77.49	81.76	1.95	58,894

TASMANIA.

1918	609	389	21,539	153,577	35.39	55.42	1.71	36,444
1919	660	456	23,745	190,524	35.97	52.12	1.93	39,641
1920	794	553	30,967	234,147	38.99	56.01	1.81	48,767
1921	893	650	33,638	302,594	37.67	51.78	2.15	52,807
1922	771	602	30,850	295,480	40.01	51.28	2.29	48,602

In New South Wales the tonnage carried is exclusive of coal, on which shunting and haulage charges only have been collected, and terminal charges have also been disregarded, but in the cases of South Australia and Tasmania such charges are included.

13. **Passenger Fares and Goods Rates.**—(i) *General.* Fares and rates are changed from time to time to suit the varying necessities of the railways, but as traffic develops and revenue increases they are in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(ii) *Passenger Fares.* Two classes are provided for passenger traffic and the fares charged may be grouped as follows:—(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, periodical and excursion fares. (d) Special fares for working men, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in class (a).

The following table shows the passenger fares for different distances charged in each State between stations for which specific fares are not fixed :—

RAILWAYS, STATE.—ORDINARY PASSENGER MILEAGE RATES, 1922.

State.	For a Journey of—											
	50 Miles.		100 Miles.		200 Miles.		300 Miles.		400 Miles.		500 Miles.	
	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.	First Class.	Second Class.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	11 0	7 2	22 0	14 7	43 11	27 3	65 4	39 9	86 10	50 9	101 6	57 10
Victoria ..	9 9	6 6	18 11	12 7	37 9	25 2	52 9	35 2	64 0	42 8	75 3	50 1
Queensland ..	9 4	6 3	17 0	11 0	32 0	20 6	46 0	28 9	59 0	36 0	71 0	43 0
South Australia	9 9	6 7	19 9	13 3	39 3	26 0	58 6	39 3	78 0	52 0	97 6	65 3
Western Australia ..	8 4	5 3	16 8	10 5	33 4	20 10	50 0	31 3	66 8	41 8	83 4	52 1
Tasmania ..	10 6	6 9	20 9	13 9	41 0	27 6	61 3	41 0	..	..	..	..
Average ..	9 9	6 5	19 2	12 7	37 10	24 6	55 8	35 10	70 11	44 7	85 9	53 8
Average per passenger-mile	d. 2.34	d. 1.54	d. 2.30	d. 1.51	d. 2.27	d. 1.47	d. 2.23	d. 1.43	d. 2.13	d. 1.34	d. 2.46	d. 1.29

The above rates, which were in force in June, 1922, have not changed materially since 1921, increases in South Australia of 14s. and 9s. 6d. respectively on the first and second class fares for journeys of 500 miles being the only alteration.

(iii) *Parcel Rates.* Parcels may be transmitted by passenger train at prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from fivepence for a parcel not exceeding 3 lbs. for any distance up to 25 miles to eighteen shillings and eightpence for a parcel weighing from 85 lbs. to 112 lbs. for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance of 450 miles is sixteen shillings and elevenpence. The rate in Queensland for a parcel weighing from 85 lbs. to 112 lbs. for 500 miles is sixteen shillings and threepence; in South Australia for 550 miles seventeen shillings and fourpence; in Western Australia for a parcel weighing from 99 lbs. to 112 lbs. for 500 miles fifteen shillings and sixpence; and in Tasmania for a distance of 250 miles the rate is eight shillings.

(iv) *Goods Rates.* (a) *General.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz. :—(a) Mileage rates, (b) District or “development” rates, and (c) Commodity rates. In each of the States there is a number—ranging from nine in Victoria to fifteen in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, i.e., a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations, and are somewhat lower than the mileage rates. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given under class (c) special rates, lower than the mileage rates.

Space does not permit of exhibiting a detailed analysis of goods rates in the several States, but the subjoined tables give an indication of the range and amount of the rates for the highest and lowest class freights and for agricultural produce at 30th June, 1922.

(b) *Highest and Lowest Class Freights.* The ordinary mileage rates charged per ton for hauls of different distances in respect of (a) the highest-class freight and (b) the lowest-class freight are given hereunder :—

RAILWAYS, STATE.—HIGHEST AND LOWEST CLASS FREIGHT RATES, 1922.

State.	Charge per Ton for a Haul of—											
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	Highest Class Freight.						Lowest Class Freight.					
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
N.S. Wales	39 2	76 8	130 10	160 0	180 0	197 6	5 0	6 9	8 5	10 0	11 3	12 4
Victoria ..	32 6	63 3	119 3	163 0	200 6	238 3	3 6	5 4	7 10	10 6	11 8	12 8
Queensland	51 10	89 4	159 8	220 6	254 1	268 4	5 8	10 2	17 3	21 2	25 8	30 3
South Aust.	40 10	78 0	145 11	200 2	247 10	288 6	4 3	8 0	13 9	18 0	22 3	26 6
Westn. Aust.	47 1	77 1	131 10	177 9	215 4	246 8	3 3	4 1	6 2	8 3	10 4	12 5
Tasmania ..	46 1	72 9	134 1	..	..	..	4 4	7 0	16 8	..	..	..
Average ..	42 11	76 2	136 11	184 3	219 7	247 10	4 4	6 11	11 8	13 7	16 3	18 5
Average per ton-mile	d. 10.30	d. 9.14	d. 8.21	d. 7.37	d. 6.59	d. 5.95	d. 1.04	d. 0.83	d. 0.70	d. 0.54	d. 0.49	d. 0.44

(a) Maximum freight for distances up to 500 miles on highest-class goods to Western stations is 210 shillings per ton.

The only change in the rates from the preceding year was a slight general increase in those for South Australia.

The classification of commodities varies. Generally, the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slate, bricks, screenings, rabbit-proof netting, timber, and posts and rails.

(c) *Agricultural Produce.* The rates at 30th June, 1922, for agricultural produce in truck loads are given in the table below :—

RAILWAYS, STATE.—RATES FOR AGRICULTURAL PRODUCE, 1922.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ..	7 4	11 6	14 5	16 1	17 9	19 0
Victoria ..	7 0	10 10	14 4	16 6	18 8	20 8
Queensland ..	5 8	10 2	12 0	13 0	14 6	15 6
South Australia ..	9 1	12 11	19 2	25 4	31 7	37 8
Western Australia ..	8 3	10 11	14 1	19 0	24 0	26 0
Tasmania ..	8 4	12 11	16 8	20 0	..	..
Average ..	7 7	11 6	15 1	18 4	21 4	23 9
Average per ton-mile	d. 1.82	d. 1.38	d. 0.91	d. 0.73	d. 0.64	d. 0.57

The rates in force in June, 1922, showed very little increase over those for June, 1921. The rate for a 400 mile haul in New South Wales was increased from seventeen shillings and sevenpence to seventeen shillings and ninepence, and for a 300 mile haul in Tasmania from sixteen shillings and eightpence to twenty shillings. In South Australia, wheat is carried at a lower rate than that specified for agricultural produce generally.

14. **Rolling Stock, 1922.**—The following table shows the rolling stock in use at the 30th June, 1922, classified according to gauge:—

RAILWAYS, STATE.—ROLLING STOCK, 1922.

State.	Gauge.					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
LOCOMOTIVES.						
New South Wales	..	1,321	..	..	..	1,321
Victoria ..	766	..	..	17	..	783
Queensland ..	..	..	671	..	9	680
South Australia..	254	..	235	..	..	489
Western Australia	..	..	423	..	..	423
Tasmania ..	..	..	79	..	7	86
All States ..	1,020	1,321	1,408	17	16	3,782

COACHING STOCK.

	Ordinary.	With Motors.	Ordinary.	With Motors.	Ordinary.	With Motors.			Ordinary.	With Motors.
New South Wales ..	..	..	2,193	1	..	..	..	..	2,193	1
Victoria ..	2,119	346	..	..	..	..	55	..	2,174	346
Queensland ..	..	..	..	..	857	17	..	8	865	17
South Australia ..	479	2	..	..	225	2	..	..	704	4
Western Australia ..	..	..	..	..	426	..	..	..	426	..
Tasmania ..	..	..	..	..	213	2	..	6	219	2
All States ..	2,598	348	2,193	1	1,721	21	55	14	6,581	370

STOCK OTHER THAN COACHING.

New South Wales ..	..	23,319	..	..	..	23,319
Victoria ..	19,624	..	..	243	..	19,867
Queensland ..	..	..	14,723	..	180	14,903
South Australia ..	4,154	..	5,426	..	..	9,580
Western Australia ..	..	..	10,135	..	..	10,135
Tasmania ..	..	..	1,654	..	77	1,731
All States ..	23,778	23,319	31,938	243	257	79,535

In previous issues of the Year Book the particulars of rolling stock were classified under the headings of "Locomotives," "Passenger Vehicles," and "Vehicles other than Passenger." The present classification has been adopted by all States with the exception of Queensland.

15. **Employees.**—The following table shows the number of railway employees in each year from 1918 to 1922 inclusive, classified according to (a) salaried staff, and (b) wages staff :—

RAILWAYS, STATE.—EMPLOYEES, 1918 TO 1922.

State.	At 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales	a4,870	a29,370	a4,937	a29,776	4,913	a29,807	5,088	32,470	5,302	36,018
Victoria ..	b2,380	b16,859	b2,525	b17,285	2,727	21,824	2,738	24,411	3,097	23,791
Queensland ..	3,251	11,090	3,296	11,222	3,239	10,692	3,121	11,237	3,458	14,862
South Australia ..	a1,099	a8,904	a1,075	a8,570	1,004	8,122	1,038	8,392	1,116	8,448
Western Australia	972	5,675	1,037	6,057	1,115	6,553	1,187	6,896	1,175	6,330
Tasmania ..	221	1,146	199	1,240	210	1,330	205	1,454	215	1,491
All States ..	12,793	73,044	13,069	74,150	13,208	78,328	13,377	84,860	14,363	90,940

(a) Including those absent on military or naval service. (b) Excluding those absent on active service.

In the period under review the totals of salaried and wages staffs rose from 85,837 in 1918 to 105,303 in 1922, an increase of nearly 22.6 per cent.

16. **Accidents.**—(i) *Classification.* A new classification of accidents which occurred through the movement of rolling stock has been adopted by each State, and particulars in accordance therewith are given hereunder :—

RAILWAYS, STATE.—ACCIDENTS, 1922.

Particulars.	N.S.W.		Vic.		Q'land.		S. Aust.		W. Aust.		Tas.		All States.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers—														
Through causes beyond their own control ..	..	38	..	10	1	9	..	7	..	6	..	..	1	70
Through contributory negligence ..	..	..	..	1	1	21	..	1	..	4	..	1	1	28
Solely through their own negligence ..	4	134	10	134	2	35	1	75	..	28	..	..	17	406
Employees in the execution of their duty—														
Through causes beyond their own control ..	1	25	1	35	1	335	..	22	2	47	..	12	5	476
Through contributory negligence ..	..	57	4	49	2	113	..	..	..	10	..	16	6	245
Solely through their own negligence ..	21	154	9	142	2	41	..	37	2	8	..	3	34	385
Employees proceeding to or from their duty within Railway boundaries ..	1	3	..	2	1	..	..	6	..	..	..	1	2	12
Persons killed or injured at crossings ..	3	3	12	12	3	5	2	12	2	3	2	1	24	36
Trespassers ..	29	18	19	7	2	4	..	..	9	1	..	..	59	30
Miscellaneous ..	8	35	3	16	3	1	3	32	..	..	..	..	17	84
Total ..	67	467	58	408	18	564	6	192	15	107	2	34	166	1,772
Number of passengers killed or injured through causes beyond their own control, per million carried ..	..	.313	..	.070	.037	.333	..	.300	..	.335	..	..	..	.209

(ii) *Particulars for Quinquennium.* The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for each of the years 1918 to 1922 inclusive :—

RAILWAYS, STATE.—ACCIDENTS, 1918 TO 1922.

In year ended 30th June—										
State.	1918.		1919.		1920.		1921.		1922.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	59	496	44	690	70	751	68	554	67	467
Victoria ..	44	561	52	510	38	451	41	597	58	408
Queensland ..	21	205	28	162	20	694	20	905	18	564
South Australia ..	17	189	22	193	13	157	12	174	6	192
Western Australia	13	86	20	140	30	127	18	134	15	107
Tasmania ..	2	7	4	7	3	31	..	47	2	34
All States ..	156	1,544	170	1,702	174	2,211	159	2,411	166	1,772

§ 4. Government Railways Generally.

1. *Summary, Federal and State Government Railways.*—In the following table a summary is given of the working of all Federal and State Government railways for the year ended 30th June, 1922 :—

RAILWAYS, FEDERAL AND STATE.—SUMMARY, 1922.

Particulars.	Federal Railways.	State Railways.	Total for Australia.
Total mileage open Miles	1,733.02	21,764.51	23,497.53
Average miles open during the year .. ,,	1,733	21,657	23,390
Total train mileage ,,	731,153	59,006,099	59,737,252
Total cost of construction of lines open £	11,276,227	a233,077,006	244,353,233
Cost per mile £	6,507	a10,709	10,399
Gross revenue £	322,499	37,872,131	38,194,630
Working expenses £	460,622	29,357,348	29,817,970
Percentage of working expenses on gross revenue %	142.83	77.52	78.07
Net revenue £	— 138,123	8,514,783	8,376,660
Interest payable £	216,446	10,612,801	10,829,247
Number of passenger journeys .. No.	95,823	334,880,743	334,976,566
Tonnage of goods and live stock carried Tons	108,937	31,418,189	31,527,126
Number of employees at 30th June, 1922—			
Salaried No.	169	14,363	14,532
Wages ,,	856	90,940	91,796
Number of persons killed and injured during the year through train accidents and movement of rolling stock—			
Killed ,,	..	166	166
Injured ,,	17	1,772	1,789

(a) Exclusive of lines from Mount Gambier to Victorian border, and from Murrayville to Victorian border.

NOTE.—(—) Denotes a loss on working.

A graph which accompanies this chapter illustrates the total capital cost, mileage open, average cost per mile open, gross revenue, working expenses and the net revenue for each of the years 1870 to 1922.

2. **Government Railway Facilities.**—The population per mile of line open for general traffic in respect of the States' railways for each State has been given previously. The following table gives the mileage of all Government railways, and the mileage per 1,000 of population :—

RAILWAYS, FEDERAL AND STATE.—MILEAGE AND POPULATION, 1922.

State or Territory.	Length of Line Open (Route).			Mileage per 1,000 of Population.
	State.	Federal.	Total.	
	Miles.	Miles.	Miles.	
New South Wales	5,116.08	..	5,116.08	2.38
Victoria	4,316.86	..	4,316.86	2.75
Queensland	5,799.33	..	5,799.33	7.38
South Australia	2,357.21	1,075.41	3,432.62	6.80
Western Australia	3,538.23	453.99	3,992.22	11.76
Tasmania	636.80	..	636.80	2.98
Federal Territory .. ..	..	4.94	4.94	1.91
Northern Territory .. ..	..	198.68	198.68	54.24
 Australia	 21,764.51	 1,733.02	 23,497.53	 4.22

3. **Mileage Open for Traffic.**—(i) *Route Mileage.* The Government railway route mileages open for traffic, classified according to gauge, as at the 30th June in each of the years 1919 to 1922 are set out in the following table, which gives also the percentages of each mileage on the total on the mainland—the figures for Tasmania being shown separately, as in the case of the succeeding table relating to rolling stock :—

RAILWAYS, FEDERAL AND STATE.—ROUTE MILEAGE, 1919 TO 1922.

Gauge.	At 30th June—							
	1919.		1920.		1921.		1922.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
Mainland—								
5 ft. 3 in. ..	5,148.01	23.35	5,215.70	23.16	5,268.28	23.24	5,342.60	23.37
4 ft. 8½ in. ..	5,840.82	26.50	6,032.05	26.79	6,059.66	26.74	6,132.96	26.83
3 ft. 6 in. ..	10,905.53	49.47	11,118.81	49.38	11,185.41	49.36	11,233.01	49.14
2 ft. 6 in. ..	121.90	0.55	121.90	0.54	121.90	0.53	121.90	0.53
2 ft. 0 in. ..	29.35	0.13	30.26	0.13	30.26	0.13	30.26	0.13
Total ..	22,045.61	100.00	22,518.72	100.00	22,665.51	100.00	22,860.73	100.00
Tasmania—								
3 ft. 6 in. ..	577.96	..	605.12	..	606.26	..	611.97	..
2 ft. 0 in. ..	23.58	..	23.58	..	23.58	..	24.83	..
Grand Total	22,647.15	..	23,147.42	..	23,295.35	..	23,497.53	..

In the four years from 1919 to 1922 the 5-ft. 3-in. gauge percentage has not changed materially, but, while the 4 ft. 8½-in. gauge has risen by 0.33, the 3-ft. 6-in. gauge has fallen by a similar percentage.

(ii) *Track Mileage.* The following table gives the track mileages of all Government railways and sidings, exclusive of Tasmania, for the years ended 30th June, 1919 to 1922, classified according to gauge, together with the percentages of each mileage on the total :—

RAILWAYS, FEDERAL AND STATE.—TRACK MILEAGE(a), 1919 TO 1922.

Gauge.	At 30th June—							
	1919.		1920.		1921.		1922.	
	Miles.	%	Miles.	%	Miles.	%	Miles.	%
5 ft. 3 in. ..	6,586.49	24.95	6,650.84	24.71	6,671.62	24.67	6,756.56	24.81
4 ft 8½ in. ..	7,549.03	28.60	7,794.49	28.96	7,827.13	28.96	7,923.12	29.08
3 ft. 6 in. ..	12,101.70	45.84	12,302.01	45.71	12,376.10	45.77	12,398.50	45.51
2 ft. 6 in. ..	130.97	0.50	131.04	0.49	131.07	0.48	131.09	0.48
2 ft. 0 in. ..	29.35	0.11	34.00	0.13	34.00	0.12	34.00	0.12
Total ..	26,397.54	100.00	26,912.38	100.00	27,039.92	100.00	27,243.27	100.00

(a) Exclusive of Tasmania.

4. *Rolling Stock.*—The numbers of the rolling stock employed on both the Federal and State Government railways are set out hereunder, classified according to gauge, as at the 30th June, 1922, together with the percentage of the numbers for each gauge on the total for the mainland. The figures for Tasmania are shown separately from those for the mainland.

RAILWAYS, FEDERAL AND STATE.—ROLLING STOCK, 1922.

Gauge.	Locomotives.		Coaching Stock.						Vehicles other than Coaching.	
			Ordinary.		With Motors.		Total.			
	No.	%	No.	%	No.	%	No.	%	No.	%
Mainland—										
5 ft. 3 in. ..	1,020	27.00	2,598	40.49	348	94.57	2,946	43.42	23,778	30.14
4 ft. 8½ in. ..	1,389	36.76	2,239	34.90	1	0.27	2,240	33.02	24,056	30.50
3 ft. 6 in. ..	1,343	35.55	1,516	23.63	19	5.16	1,535	22.63	30,618	38.82
2 ft. 6 in. ..	17	0.45	55	0.86	..	..	55	0.81	243	0.31
2 ft. 0 in. ..	9	0.24	8	0.12	..	..	8	0.12	180	0.23
Total ..	3,778	100.00	6,416	100.00	368	100.00	6,784	100.00	78,875	100.00
Tasmania—										
3 ft. 6 in. ..	79	..	213	..	2	..	215	..	1,654	..
2 ft. 0 in. ..	7	..	6	..	..	..	6	..	77	..
Grand Total	3,864	..	6,635	..	370	..	7,005	..	80,606	..

The present classification was adopted by the Conference of Railways Commissioners in 1921.

§ 5. Private Railways.

1. *Classification.*—A list of private railways, including those open to the public for general traffic and for special purposes, is given in “Transport and Communication Bulletin, No. 14,” but, owing to limitations of space, it is not possible to include the information in this volume.

2. **Total Mileage Open, 1921-22.**—As stated in a previous page, a number of private railway lines have from time to time been constructed in Australia. Most of these lines, however, have been laid down for the purpose of hauling timber, sugar-cane, coal, or other minerals, and they are not generally used for the conveyance of passengers or for public traffic. In many cases the lines are practically unballasted and easily removable, and they run through bush country in connexion with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this chapter dealing with Tramways (see C. *Tramways*).

The following table gives particulars of private railways open for traffic for general and special purposes during 1921-22. A classification of these lines according to gauge has already been given in § 1.

RAILWAYS, PRIVATE.—MILEAGE OPEN, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
For general traffic	186.83	24.94	280.79	33.80	278.35	197.61	1,002.32
For special purposes	172.53	32.93	983.77	20.95	596.91	38.08	1,845.17
Total ..	359.36	57.87	1,264.56	54.75	875.26	235.69	2,847.49

3. **Lines Open for General Traffic.**—The following statement shows, in tabular form, for each State the particulars of the operations of private railways open for general traffic for the year 1922. More detailed information regarding these lines will be found in "Transport and Communication Bulletin No. 14," published by this Bureau.

RAILWAYS, PRIVATE.—SUMMARY, 1921-22.

State.	Companies from which returns were received.	Miles Open (Route).	Train-Miles.	Capital Cost.	Gross Revenue.	Working Expenses.	Rolling Stock.			Passenger Journeys.	Tons of Goods, etc.	No. of Employees.
							Locos.	Coaches.	Other Vehicles.			
	No.	No.	No.	£	£	£	No.	No.	No.	No.	Tons.	No.
New South Wales ..	10	186.83	627,685	2,643,228	364,657	265,869	57	43	886	1,061,060	770,237	665
Victoria ..	2	24.94	39,500	86,001	13,492	10,400	4	4	42	29,224	82,579	27
Queensland	16	280.79	53,956	499,866	38,866	29,170	17	21	261	112,890	96,006	94
South Australia ..	1	33.80	57,470	(a)	(a)	(a)	7	3	165	1,662	367,341	31
West. Australia ..	1	278.35	233,990	2,060,831	128,073	76,900	18	20	400	62,160	83,951	226
Tasmania	6	197.61	139,879	1,228,565	91,977	75,373	27	18	405	55,252	116,034	177
All States	36	1,002.32	1,152,480	6,518,491 (b)	637,065 (b)	457,712 (b)	136	109	2,159	1,322,248	1,516,148	1,220

(a) Not available.

(b) Incomplete.

The particulars given in the table are incomplete in respect of the States of New South Wales, Queensland, South Australia, and Tasmania. In New South Wales and Queensland several of these lines, although owned by private companies, are operated by the Government Railway Departments, and Government rolling stock is used thereon.

§ 6. Comparative Railway Statistics, Various Countries.

A table has been given showing the railway facilities in 1921–22 in the States, in the Northern Territory, and in the Commonwealth, the railway mileage open for traffic being compared both with the area and population.

In the table below, comparative railway statistics of a like character are given in respect of the principal countries of the world at certain dates. The dates have been so chosen as to bring into relation the latest accurate figures for both population and railway mileage.

RAILWAYS, VARIOUS COUNTRIES.—MILEAGE, POPULATION, AND AREA.

Country.	Year.	Miles of Railway.	Population.	Area in Square Miles.	Miles of Railway.		
					Per 1,000 of Popu- lation.	Per 1,000 Sq. Miles of Territory.	
Europe—							
United Kingdom ..	1920	23,734	47,307,601	121,633	0.50	195.12	
Belgium ..	1919	4,649	7,478,840	11,752	0.62	395.59	
Denmark ..	1920	2,662	3,289,195	17,144	0.81	155.27	
France ..	1922	25,766	39,209,518	212,659	0.66	121.16	
Germany ..	1920	35,677	59,858,284	182,271	0.60	195.74	
Greece ..	1920	1,470	5,536,375	41,933	0.27	35.06	
Italy ..	1921	10,290	38,835,941	110,632	0.26	93.01	
Netherlands ..	1921	2,377	6,977,430	12,582	0.34	188.92	
Norway ..	1921	2,141	2,649,775	124,964	0.81	17.13	
Portugal ..	1920	2,128	6,041,000	35,490	0.35	59.96	
Spain ..	1920	9,504	21,347,335	194,800	0.45	48.79	
Sweden ..	1921	9,417	5,954,316	173,035	1.58	54.42	
Switzerland ..	1920	3,915	3,880,320	15,976	1.01	245.06	
Asia—							
India ..	1922	37,266	318,942,480	1,802,629	0.12	20.67	
Japan ..	1922	6,728	76,987,469	260,738	0.08	25.80	
Africa—							
Egypt ..	1922	3,040	13,551,000	350,000	0.22	8.69	
Union of South Africa	1922	10,890	6,928,580	473,089	1.57	23.02	
America, North and Cen- tral—							
Canada ..	1921	39,771	8,788,483	3,729,665	4.53	10.66	
Mexico ..	1920	10,754	13,887,080	767,198	0.77	14.02	
United States ..	1920	254,845	105,710,620	3,026,789	2.41	84.19	
America, South—							
Argentina ..	1922	21,935	8,750,000	1,153,119	2.51	19.02	
Brazil ..	1920	17,213	30,635,605	3,275,510	0.56	5.26	
Chile ..	1920	5,403	3,754,723	289,829	1.44	18.64	
Australasia—							
Australia ..	1922	26,345	5,567,969	2,974,581	4.73	8.86	
New Zealand ..	1922	3,156	1,316,902	103,861	2.40	30.39	

It will be seen from the above table that per 1,000 of population the Commonwealth of Australia had the greatest mileage (in 1922), 4.73 miles; the next in magnitude being Canada (1921), with 4.53 miles, Argentina (1922), with 2.51 miles, United States (1920), with 2.41 miles, and New Zealand (1922), with 2.40 miles.

The least mileage per 1,000 of population is shown in the case of Japan (1922), with 0.08 mile, followed by India (1922), with 0.12 mile.

With regard to the mileage per 1,000 square miles of territory, Belgium (1919) with 395.59 miles was easily first, followed by Switzerland (in 1920) with 245.06 miles, Germany (in 1920) with 195.74 miles, the United Kingdom (in 1920) with 195.12 miles, Netherlands in (1921) with 188.92 miles, and Denmark (in 1920) with 155.27 miles.

The least mileage open per 1,000 square miles is that of Brazil (in 1920) with 5.26 miles.

C. TRAMWAYS.

1. **Systems in Operation.**—(i) *General.* Tramway systems are in operation in all the States, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the larger towns.

In many parts of Australia private lines used for special purposes in connexion with the timber, mining, sugar, or other industries are often called tramways, but they are really private railways, and the traffic on them has nothing in common with that of the street tramways for the conveyance of passengers, which are dealt with in the present paragraph.

(ii) *Total Mileage Open and Classification of Lines.* The following tables show the total mileage of tramway lines open for general passenger traffic for the year 1921–22, and also in Australia as a whole for the years 1917–18 to 1921–22, classified (a) according to the motive power utilized, (b) according to the nature of the authority by which the lines are controlled and (c) according to gauge :—

TRAMWAYS.—MILEAGE OPEN FOR PASSENGER TRAFFIC, 1921–22.

Nature of Motive Power, Controlling Authority, and Gauge.	N.S. Wales.	Victoria.	Q'land.	South Australia. (a)	Western Australia.	Tasmania.	All States.
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ACCORDING TO MOTIVE POWER.

	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	158.78	109.50	42.60	69.45	50.38	25.64	456.35
Steam	73.98	..	6.65	..	17.75	..	98.38
Cable .. ..	..	45.90	..	..	..	..	45.90
Horse .. ..	..	0.63	..	19.86	7.16	..	27.65
Total	232.76	156.03	49.25	89.31	75.29	25.64	628.28

ACCORDING TO CONTROLLING AUTHORITY.

Government	229.26	122.83	..	19.86	51.64	..	423.59
Municipal .. ..	..	..	6.65	69.45	8.83	25.64	110.57
Private	3.50	33.20	42.60	..	14.82	..	94.12
Total	232.76	156.03	49.25	89.31	75.29	25.64	628.28

ACCORDING TO GAUGE.

Gauge—							
5 ft. 3 in. ..	..	5.14	..	7.35	..	..	12.49
4 ft. 8½ in. ..	232.76	150.89	42.60	69.45	..	..	495.70
3 ft. 6 in. ..	..	..	6.65	10.01	58.38	25.64	100.68
2 ft. 0 in. ..	..	..	..	2.50	16.91	..	19.41
Total	232.76	156.03	49.25	89.31	75.29	25.64	628.28

(a) 16.36 miles included in South Australian Government railway mileage.

TRAMWAYS.—MILEAGE OPEN FOR PASSENGER TRAFFIC, AUSTRALIA, 1917-18
TO 1921-22.

Nature of Motive Power, Controlling Authority, and Gauge.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
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ACCORDING TO MOTIVE POWER.

	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	426.40	430.87	443.03	445.10	456.35
Steam	93.80	99.39	98.86	97.73	98.38
Cable	46.04	45.92	45.90	45.90	45.90
Horse	32.37	23.74	25.15	27.89	27.65
Total	598.61	599.92	612.94	616.62	628.28

ACCORDING TO CONTROLLING AUTHORITY.

Government	345.94	345.09	413.46	417.84	423.59
Municipal	158.03	159.17	103.82	104.19	110.57
Private	94.64	95.66	95.66	94.59	94.12
Total	598.61	599.92	612.94	616.62	628.28

ACCORDING TO GAUGE.

Gauge—					
5 ft. 3 in.	12.51	12.51	12.51	12.51	12.49
4 ft. 8½ in.	469.76	473.28	484.57	486.42	495.70
3 ft. 6 in.	93.91	94.48	96.21	98.04	100.68
2 ft. 0 in.	22.43	19.65	19.65	19.65	19.41
Total	598.61	599.92	612.94	616.62	628.28

The mileage of electric tramways has steadily increased during the period dealt with above. It may be noted that the transfer in 1920 from municipal to Government control of the principal Melbourne and suburban systems was responsible for the increase in Government-controlled mileage.

2. New South Wales.—(i) *Government Tramways.* The tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners. In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1922, seven such systems in operation within the metropolitan area, five of which are operated by electricity and two by steam.

(a) *Particulars of Working.* The subjoined statement gives particulars of the working of the electric and steam tramways in Sydney, and of other tramways under Government control in 1921-22 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—RETURNS FOR 1921-22.

Line.	Mileage Open for Traffic.		Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings. (a)	Interest.	Profit or Loss.(a)	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.(a)
	Route.	Track.								
	Miles.	Miles.	£	£	£	£	£	£	%	%
Sydney and Suburban—Electric Steam	158.78 8.19	283.07 9.61	8,343,096 53,731	3,353,768 23,574	2,700,686 32,992	653,082 — 9,418	411,266 2,710	241,816 — 12,128	80.53 139.95	+ 7.83 — 17.53
Total	166.97	292.68	8,396,827	3,377,342	2,733,678	643,664	413,976	229,688	80.94	+ 7.67
Parramatta—Steam	6.69	6.69	40,451	14,358	16,233	— 1,875	2,044	— 3,919	113.06	— 4.64
Sutherland to Cronulla—Steam	7.40	7.40	52,083	19,738	21,536	— 1,798	2,624	— 4,422	109.11	— 3.45
Newcastle—Steam	34.09	44.46	888,729	177,404	208,894	— 31,490	42,253	— 73,743	117.75	— 3.51
East to West Maitland—Steam	4.06	4.06	35,318	7,817	9,345	— 1,528	1,783	— 3,311	119.55	— 4.33
Broken Hill—Steam	10.05	11.44	92,324	13,476	25,930	— 12,454	4,648	— 17,102	192.42	— 14.60
Total	229.26	366.73	9,505,732	3,610,135	3,015,616	594,519	467,328	127,191	83.53	+ 6.25

(a) + indicates a profit ; — indicates a loss.

(b) *Capital Cost.* The capital cost shown in the preceding table was made up as follows :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—CAPITAL COST, 1922.

Permanent Way.	Rolling Stock.	Power-houses, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Store Advances Account.	Total.
£	£	£	£	£	£	£	£
4,946,572	1,927,806	1,901,897	182,519	257,546	2,392	287,000	9,505,732

The average cost per mile open was £21,579 for permanent way and £19,889 for all other charges, making a total of £41,468 per mile.

During the year 1921-22, two new extensions, 1.97 miles in length, were opened for traffic.

(c) *Summary, Government Tramways.* The following table gives a summary of the operations of all Government tramways for the years 1918 to 1922 :—

GOVERNMENT TRAMWAYS.—NEW SOUTH WALES.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Mileage Open for Traffic. (Route.)	Total Cost of Construction and Equipment.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.	Passengers carried.	Persons employed.
	Miles.	£	£	£	£	£	%	%	No. '000	No.
1918 ..	225.35	8,470,091a	1,992,641	1,603,260	389,381	348,546	80.46	4.60	255,741	8,955
1919 ..	225.54	8,568,138a	2,237,701	1,850,724	386,977	368,529	82.71	4.52	268,798	9,028
1920 ..	225.81	8,768,548a	2,881,797	2,486,121	395,676	404,125	86.27	4.51	324,885	8,970
1921 ..	227.29	9,060,757a	3,471,737	2,943,251	528,486	421,814	84.78	5.83	337,690	9,018
1922 ..	229.26	9,505,732a	3,610,135	3,015,616	594,519	467,328	83.53	6.40	330,939	9,344

(a) £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result in 1922, after providing for all working expenses and £467,328 for interest on the capital invested, was a profit of £127,191 as compared with a profit of £106,672 in the preceding year. During the year 1921–22, 330,938,567 passengers were carried, a decrease of 6,751,306 as compared with the previous year.

(d) *Sydney Tramways.* Official Year Book No. 15, p. 589, gives a short account of the progress of the Sydney Tramway System. Owing to limitations of space this information cannot be repeated, but the subjoined table shows certain important particulars for the years 1918 to 1922 inclusive.

ELECTRIC TRAMWAYS.—SYDNEY.—SUMMARY, 1918 TO 1922.

Particulars.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
Mileage open for traffic—					
Route miles	154.37	154.56	155.35	156.81	158.78
Track miles	274.55	274.75	276.00	278.75	283.07
Total cost of construction and equipment £	7,738,377	7,779,227	7,842,549	8,009,611	8,343,096
Current used for traction purposes kilowatt hours	73,384,629	83,780,703	92,074,950	97,193,560	99,477,210
Tram miles run No.	20,618,808	23,298,238	25,394,701	27,112,029	27,768,543
Passengers carried No.	239,442,696	250,706,503	304,986,683	315,847,363	310,037,935
Gross revenue £	1,847,868	2,063,055	2,676,748	3,216,358	3,353,768
Working expenses £	1,457,349	1,673,536	2,246,674	2,649,132	2,700,686
Net revenue £	390,519	389,519	430,074	567,226	653,082
Percentage of working expenses on gross revenue %	78.87	81.12	83.93	82.36	80.53
Cars in use	1,398	1,393	1,394	1,414	1,427
Persons employed	8,463	8,610	8,440	8,352	9,177

The current for the operation of the City and Suburban tramways is generated at the power-houses at Ultimo and White Horse Bay, which have been erected at a total cost of £1,901,897, including the cost of the sub-stations and plant. The total output of the power-houses, for both lighting and traction purposes, during the year 1921–22 was 133,225,053 kilowatt-hours, of which the direct-current supply was 45,424, and the alternating current 133,179,629 kilowatt-hours.

(ii) *Private Tramways.* A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3½ miles, where it connects with the Parramatta River steamers which convey passengers and goods to and from Sydney. This line, which has a gauge of 4 ft. 8½ in., was opened for traffic in 1883. In 1922 the number of tram-miles run was 18,200, and the number of passengers conveyed 128,184.

3. *Victoria.*—(i) *General.* In Melbourne there are several tramway systems carried on under the control of various authorities, the most important being the cable and electric systems worked by the Melbourne and Metropolitan Tramway Board, to which reference will be made further on. There were also, at 30th June, 1922, four lines of electric tramways, viz.:—(a) St. Kilda to Brighton, and (b) Sandringham to Black Rock, both of which belong to and are operated by the Railway Commissioners; (c) Flemington Bridge to the Saltwater River and Keilor-road, owned by a private company. In addition there are systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies.

Numerous tramways have been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. These, however, are of the nature of the private railways referred to in sub-section 1 hereof. A tramway to the Zoological Gardens, with horse traction, is operated by the Melbourne and Metropolitan Tramways Board.

(ii) *Melbourne and Metropolitan Tramways Board.* (a) *General.* A short account of the formation of the Melbourne Tramway and Omnibus Company, and of the Tramway Board, will be found in earlier issues of this work.

(b) *Cable and Horse Tramways.* (1) *Services.* The complete system consists of 45.90 miles of double track connecting the City of Melbourne with the nearer suburbs and 0.63 miles of horse tramway at Royal Park. The gauge of track is 4 ft. 8½ in.

(2) *Particulars of Working.* A summary for the years 1918 to 1922 is given hereunder:—

CABLE TRAMWAYS.—MELBOURNE.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Mileage Open (Route).			Mileage Run during Year.			Number of Passengers Carried.		
	Cable.	Horse.	Total.	Tram.		Total.	Tram.		Total.
				Cable.	Horse.		Cable.	Horse.	
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	No.	No.	No.	
1918(a) ..	43.68	0.63	44.31	12,822,147	10,882	12,833,029	112,754,979	279,178	113,034,157
1919(a) ..	43.68	0.63	44.31	13,138,992	10,645	13,149,637	118,043,604	259,177	118,302,781
1920(b) ..	45.90	0.63	46.53	13,424,488	10,648	13,435,136	133,378,390	296,051	133,675,041
1921 ..	45.90	0.63	46.53	14,058,575	10,406	14,068,981	148,755,005	293,676	149,048,681
1922 ..	45.90	0.63	46.53	14,624,684	10,134	14,634,818	150,962,255	239,508	151,201,763

Year ended 30th June—			Traffic Revenue.			Working Expenses.			Percentage of Working Expenses on Revenue.	No. of Employees at end of Year.
			Tram.		Total.	Tram.		Total.		
			Cable.	Horse.		Cable.	Horse.			
			£	£	£	£	£	£	%	No.
1918(a)	..	..	902,471	549	903,020	513,717	735	514,452	56.97	2,273
1919(a)	..	..	945,286	513	945,799	577,736	1,154	578,890	61.21	2,400
1920(b)	..	..	1,075,236	606	1,075,842	722,482	1,564	724,046	67.30	2,786
1921	..	..	1,146,955	792	1,147,747	843,333	1,100	844,433	73.60	2,836
1922	..	..	1,232,415	916	1,233,331	943,415	1,184	944,599	76.59	2,864

(a) Exclusive of Northcote Cable Tramway.
2nd February, 1920, to 30th June, 1920.

(b) Inclusive of Northcote Cable Tramway from

(c) *Electric Tramways.* (1) *Services Operated.* The system controlled by the Melbourne and Metropolitan Tramway Board at 30th June, 1922, consisted of five services, viz., (a) The Prahran and Malvern Tramways; (b) The Hawthorn Tramways;

(c) The Melbourne, Brunswick and Coburg Tramways; (d) The Fitzroy, Northcote and Preston Tramways; and (e) The Footscray Tramways, all of 4 ft. 8½ in. gauge. The last-mentioned tramways were completed about the middle of 1920, but the opening for traffic was deferred until 6th September, 1921, pending the supply of power from the Railways Commissioners' power house at Newport.

(2) *Particulars of Working.* A summary of operations for the year 1921–22 is given hereunder :—

MELBOURNE TRAMWAY BOARD.—ELECTRIC SERVICES.—OPERATIONS, 1921–22.

Year.	Mileage. (Route.)	Total Cost of Con- struction and Equipment	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit.
	Miles.	£	Kilowatt- hours.	No.	No.	No.	£	£	£
1921–22	68.75	1,853,026	14,765,350	6,178,990	63,546,435	600,698	436,518	78,592	85,588

(3) *Future Development.* A comprehensive construction scheme has been prepared for submission to Parliament in connexion with the extension of existing lines, the linking-up of lines already constructed in different suburbs, and the opening up of new routes. The total mileage involved in this scheme is 10.40 miles (route).

(iii) *Other Government Tramways.* The Government Railways own and operate two lines of electric street railways, viz., St. Kilda to Brighton (5.14 miles of 5 ft. 3 in. gauge) and Sandringham to Black Rock (2.41 miles of 4 ft. 8½ in. gauge), a total route mileage of 7.55 miles.

Particulars of the operations of these tramways are contained in the tables hereunder. In the case of the former line the figures shown are for the years 1917–18 to 1921–22 and for the latter, 1918–19 to 1921–22 :—

ELECTRIC TRAMWAY.—ST. KILDA-BRIGHTON.—1918 TO 1922.

Year ended 30th June—	Total Cost of Construc- tion and Equipment.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses	Interest.	Net Profit or Loss.
	£	Kilowatt- hours.	No.	No.	£	£	£	£
1918 ..	158,986	745,853	521,525	3,854,677	31,614	23,653	6,359	1,602
1919 ..	164,347	932,010	527,305	4,945,627	40,048	27,207	6,574	6,267
1920 ..	(a) 150,128	1,381,821	551,307	6,805,892	50,494	42,813	6,005	1,676
1921 ..	153,581	1,487,928	552,772	5,572,454	47,005	63,921	6,143	— 23,059
1922 ..	172,661	1,550,469	538,495	5,488,034	55,372	51,501	6,906	— 3,035

(a) Cost of Rolling Stock for Sandringham–Black Rock electric street railway was included under this head in preceding years. (—) Indicates loss.

ELECTRIC TRAMWAY.—SANDRINGHAM-BLACK ROCK.—1919 TO 1922.

Year ended 30th June—	Total Cost of Construc- tion.	Current used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses	Interest.	Net Profit or Loss.
	£	Kilowatt- hours.	No.	No.	£	£	£	£
1919(c) ..	(a) 42,706	38,650	29,008	616,746	3,751	1,792	529	1,430
1920 ..	(b) 57,910	161,370	113,405	2,433,162	11,597	7,898	2,316	1,383
1921 ..	(b) 59,973	172,920	121,575	1,232,796	9,140	8,802	2,399	— 2,061
1922 ..	72,735	231,600	127,348	1,278,571	11,398	9,844	2,909	— 1,355

(a) Exclusive of Rolling Stock. (b) Inclusive of Rolling Stock. (c) Period, 11th March to 30th June. (—) Indicates loss.

(iv) *Private Tramways.* Three systems of tramways are owned and operated by private companies, viz., North Melbourne-Essendon (6.85 miles), Ballarat and Bendigo (21.25 miles) and Geelong (5.10 miles); giving a total route mileage of 33.20 miles. Electric traction is used on each of these lines which are constructed to the 4 ft. 8½ in. gauge.

The first-mentioned system was purchased by the Melbourne and Metropolitan Tramways Board on the 1st August, 1922.

(v) *Summary for all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1918 to 1922 inclusive :—

ELECTRIC TRAMWAYS.—VICTORIA.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	92.17	1,939,887	13,169,343	6,775,538	57,020,726	432,921	318,163	268	1,167
1919	94.58	2,027,057	13,955,124	6,832,873	60,753,278	463,320	344,220	274	1,318
1920	105.26	2,442,746	15,758,101	7,302,713	74,359,826	553,507	418,462	294	1,554
1921	105.26	2,528,665	17,613,387	8,102,393	79,807,665	647,067	539,652	302	1,795
1922	109.50	2,675,023	18,755,105	8,471,039	82,444,219	790,494	535,434	309	1,836

4. *Queensland.*—(i) *General.* The electric tramways in the city and suburbs of Brisbane were controlled by a private company, whose head office is in London, until 31st December, 1922, on which date they were purchased by the Queensland Government which, under the provisions of the Brisbane Tramway Trust Act 1922, appointed a Trust to control and operate the Tramway system. The total length of the Brisbane system was 42.60 route miles at the end of the year 1922. There is also a steam tramway having a length of 6.65 route miles in operation at Rockhampton.

(ii) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. Cost of construction and equipment to the end of the year 1921 (the latest available) was £1,640,127, the gauge of line being 4 ft. 8½ in. The following table gives a summary for the calendar years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—BRISBANE.—SUMMARY, 1918 TO 1922.

Year ended 31st Dec.—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	41.58	1,435,414	9,453,441	4,379,679	57,456,832	412,569	264,858	173	1,103
1919	42.60	1,435,414	10,309,249	4,600,482	61,415,350	445,333	295,697	174	1,073
1920	42.60	1,435,414	11,000,875	4,934,043	69,236,690	527,264	387,456	178	1,130
1921	42.60	1,640,127	11,413,745	4,994,357	68,056,309	544,828	411,180	178	1,142
1922	42.60	1,640,127	12,143,194	5,102,527	71,529,033	575,088	446,472	181	1,179

(a) To 31st December, 1917.

(b) To 31st December, 1921.

(iii) *Rockhampton Municipal Tramways.* These tramways were opened for traffic in 1909, the motive power being steam. The length of line is 6.65 route miles, and the gauge 3 ft. 6 in. The capital cost to 31st December, 1922, was £53,129. During the year 1,763,007 passengers were carried, the revenue being £14,475 and working expenses £15,778. The number of the staff at the end of year was 46.

(iv) *Sugar-Mill Tramways.* In various parts of Queensland there are tramways used in connexion with the sugar-milling industry, chiefly for the purpose of hauling cane. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms. Particulars of these lines are given in Transport and Communication Bulletin No. 14, but lack of space precludes the publication of such information in this volume.

5. *South Australia.*—(i) *Electric Tramways.* The tramways in Adelaide and suburbs are controlled by a Municipal Tramways Trust created in 1907. Prior to this year, the system was run with horse-traction by several private companies. Electric traction was inaugurated in 1909, and at the 31st July, 1922, the Tramways Trust operated a total route mileage of 69.45 miles of 4 ft. 8½ in. gauge. A summary for the years 1918 to 1922 is given in the subjoined table:—

ELECTRIC TRAMWAYS.—ADELAIDE.—SUMMARY, 1918 TO 1922.

Year. ended 31st July—	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Em- ployed.
	Miles.	£	Kilowatt- hours.	No.	No.	£	£	No.	No.
1918	65.66	1,751,943	10,758,897	5,359,776	46,466,258	414,836	250,586	174	1,099
1919	65.66	1,789,487	10,730,307	5,176,264	45,882,376	428,477	234,993	185	1,337
1920	66.03	1,793,298	11,261,046	5,407,654	50,815,848	505,303	339,166	190	1,270
1921	66.40	1,890,067	12,096,515	5,785,148	55,323,737	555,421	392,824	190	1,264
1922	69.45	2,190,147	12,542,540	5,960,082	56,787,339	580,505	405,230	198	1,287

(ii) *Horse Tramways.* There are also 19.86 miles of Government horse-tramways in country districts, worked in connexion with the railway system, of which 17.36 miles are used for passenger service, and 2.50 miles for special purposes. The following statement gives particulars of these lines:—

HORSE TRAMWAYS.—SOUTH AUSTRALIA.—PARTICULARS, 1922.

Particulars.	Length.	Gauge.	Nature of Traffic.
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	(a)5.15	5 3	Passengers and goods
Gawler	(a)1.20	5 3	" "
Victor Harbour and Breakwater ..	1.00	5 3	" "
Dry Creek and Magazine	1.00	2 0	Explosives
Magazine and Broad Creek	1.50	2 0	"
Port Broughton and Mundoorra ..	(a)10.01	3 6	Passengers and goods

(a) Included in mileage of Government railways.

6. *Western Australia.*—(i) *Government Tramways.* (a) *General.* Apart from the electric tramways, there are several Government tramways, with a total length of 24.91 miles. The lines are under the control of the Department of the North-West, and the most important is that between Roebourne and Cossack, constructed on a 2-ft. gauge, with a length of 12.50 miles, and worked by steam. The remaining 12.41 miles are made up of several short lengths worked by steam or horses in connexion with the jetties at certain ports and providing communication between the jetties and the goods sheds or warehouses.

(b) *Steam and Horse Tramways.* The Government steam or horse tramways for the year ended 30th June, 1922, showed a capital cost to that date of £87,592, the gross revenue for the year being £20,845, and the working expenses £11,362.

(c) *Perth Electric Tramways.* These tramways were opened for traffic by a private company on the 24th September, 1899, and the system has since been extended to many of the suburbs. The system was taken over by the Government on the 1st July, 1913, and is now worked in conjunction with the Government railways. The gauge of line is 3 ft. 6 in. The following table shows particulars of working for the year ended 30th June, 1922 :—

ELECTRIC TRAMWAYS.—PERTH.—1922.

Mileage.	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
26.73	779,081	6,666,050	2,644,725	25,042,689	248,463	209,104	103	645

(ii) *Private Tramways.* Electric tramways with a route mileage at 31st August, 1922, of 8.83 miles, and controlled by the municipal authorities, are in operation in Fremantle. In Kalgoorlie and Boulder a private company controls the electric tramways, and at the end of 1922 the length of line was 14.82 miles (route). All the foregoing lines are of 3 ft. 6 in. gauge.

(iii) *Summary, all Electric Tramways.* The subjoined table gives a summary for all electric tramway systems in the State for the years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—WESTERN AUSTRALIA.—SUMMARY, 1918 TO 1922.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	50.62	1,152,417	6,118,637	3,127,284	21,218,019	215,011	169,058	130	503
1919	50.22	1,150,018	5,922,421	2,951,653	20,954,579	209,664	170,261	130	545
1920	50.66	1,175,597	7,724,522	3,612,417	27,322,826	278,117	221,045	136	629
1921	50.90	1,227,304	8,412,175	3,472,632	33,377,124	313,195	276,607	136	728
1922	50.38	1,364,177	8,745,935	3,540,886	32,954,755	338,353	277,971	160	826

7. *Tasmania.*—(i) *Electric Tramways.* In Hobart there is a system of electric tramways consisting of 15.50 route miles of 3 ft. 6 in. gauge controlled by the Hobart Municipal Council. The Launceston City Council operates tramways in Launceston having a length of 10.14 route miles of 3 ft. 6 in. gauge.

The following table gives a summary of the working of the two systems for the years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—TASMANIA.—SUMMARY, 1918 TO 1922.

Year.	Mileage Open for Traffic (Route).	Total Cost of Construction and Equipment.	Current Used for Traction Purposes.	Tram Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Cars in Use.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	No.	No.
1918	22.00	389,659	1,913,720	1,192,955	9,785,155	81,918	56,103	60	253
1919	23.25	400,375	2,396,717	1,215,663	10,070,263	97,459	63,561	60	288
1920	23.13	413,060	2,192,420	1,257,911	11,961,256	112,023	83,385	63	362
1921	23.13	443,872	2,610,504	1,428,696	14,766,819	142,500	108,684	67	428
1922	25.64	490,476	2,697,680	1,504,634	15,315,969	155,129	122,622	68	448

(ii) *Other Tramways.* There are, also, several lines of steam tramways privately-owned. These are dealt with in § 5, Private Railways, as they do not come within the category of street tramways for the conveyance of passengers.

8. **Electric Tramways, Australia.**—(i) *Summary for 1922.* The subjoined table gives details regarding all electric tramways in Australia. The returns for tramways in Hobart, in Ballarat and Bendigo, in Kalgoorlie, and in Brisbane are for the calendar year 1922 ; for other tramways they refer generally to the financial year 1922.

ELECTRIC TRAMWAYS.—AUSTRALIA.—SUMMARY, 1921-22.

State.	Mileage open for Traffic (Route).	Cost of Construction and Equipment.	Current used for Traction purposes.	Tram-Miles Run.	Passengers Carried.	Gross Revenue.	Working Expenses.	Percentage of Working Expenses on Gross Revenue.	Cars, Motors and Trailers.	Persons Employed.
	Miles.	£	Kilowatt-hours.	No.	No.	£	£	%	No.	No.
N.S.W. . .	158.78	8,343,096	99,477,210	27,768,543	310,037,935	3,353,768	2,700,686	80.53	1,427	9,177
Victoria . .	109.50	2,675,023	18,755,105	8,471,039	82,444,219	790,494	585,434	74.06	309	1,836
Q'land . .	42.60	1,640,127	12,143,194	5,102,527	71,529,033	575,088	446,472	77.64	181	1,179
S. Aust. . .	69.45	2,190,147	12,542,540	5,960,082	56,787,339	580,505	405,230	69.81	198	1,287
W. Aust. . .	50.38	1,364,177	8,745,935	3,540,886	32,954,755	338,353	277,971	82.15	160	826
Tasmania . .	25.64	490,476	2,697,680	1,504,634	15,315,969	155,129	122,622	79.04	68	448
All States	456.35	16,703,046	154,361,664	52,347,711	569,069,250	5,793,337	4,538,415	78.33	2,343	14,753

(a) To 31st December, 1921.

The percentage of working expenses on gross revenue for all electric tramways in Australia was 78.33, ranging from 69.81 in the case of South Australia to 82.15 in the case of Western Australia.

(ii) *Summary for Years 1918 to 1922.* The following table gives particulars of the operations of electric tramways in Australia for the years 1918 to 1922 :—

ELECTRIC TRAMWAYS.—AUSTRALIA.—1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Mileage open for Traffic (Route) Miles.	426.40	430.87	443.03	445.10	456.35
Total Cost of Construction and Equipment £	14,441,189	14,581,578	15,110,405	15,239,646	16,703,046
Current used for Traction Purposes Kil. hrs.	114,798,667	127,094,621	140,011,914	149,344,886	154,361,664
Tram-miles run No.	41,454,040	44,075,173	47,909,439	50,895,255	52,347,711
Passengers carried „	431,383,636	449,782,349	538,683,129	567,179,017	569,067,250
Gross Revenue £	3,405,123	3,707,307	4,652,962	5,419,369	5,703,337
Working Expenses £	2,516,117	2,832,268	3,696,188	4,378,079	4,538,415
Percentage of Working Expenses on Gross Revenue £	73.89	76.40	79.44	80.78	78.33
Cars, Motors and Trailers No.	2,203	2,216	2,255	2,287	2,343
Persons Employed „	12,588	13,171	13,385	13,709	14,753

During the five years included in the above table the percentage of working expenses on the gross revenue of all electric tramways in Australia reached a maximum of 80.78 in 1921 and a minimum of 73.89 in 1918, the average over the whole period being 78.12.

D. AIRCRAFT.

1. **General.**—About thirty years ago Lawrence Hargraves, of Sydney, New South Wales, discovered the principles that have made human flight possible. Contemporaneously with Otto Lilienthal, a German scientist, he produced the “box-kite” which was afterwards used by European and American experimenters as the basis of design for the modern flying-machine.

To Hargraves is also due the idea of the rotary engine, which, by reason of its lightness per horse-power, was later to make possible many remarkable achievements in aviation.

The first flight in a power-driven machine was made by the Wright Brothers in 1903. During the succeeding five or six years similar success attended the efforts of a number of designers in Europe and Great Britain. In Australia the first successful flight in a power-driven machine took place in 1909, when a number of demonstration flights were made in the capital cities.

Meanwhile, Australian enthusiasts had not been idle, and the first successful flights on an Australian machine designed by Mr. J. R. Duigan, of Mia Mia, Victoria, were accomplished in September, 1910. The whole of the machine, except the engine, which was constructed in Melbourne, was built from Australian materials by the designer. This machine is now in the Australian War Museum.

Numerous other experimenters also had successful results, but the distance of Australia from the centres of activity in this direction so hampered their efforts that several who later became famous left the country and continued their work in England and Europe.

2. Australian Aviation Schools during the War.—During the war period, Aviation Schools were established at Point Cook, Victoria, and at Richmond, New South Wales, and much useful work was done in the training of pilots and mechanics for the squadrons overseas.

3. Post-war Activities.—After the cessation of hostilities, a number of small companies were formed by ex-officers of the Australian Flying Corps and the Royal Air Force, and throughout Australia machines were engaged in carrying passengers on short flights.

4. England-Australia Flight.—During 1919 the Commonwealth Government offered a prize of £10,000 to the crew of the first aeroplane to complete within thirty days a flight from England to Australia. A number of attempts were made, but only one machine, in charge of Captain (later, Sir) Ross Smith, D.F.C., M.C., A.F.C., succeeded in fulfilling all the conditions, and landed at Port Darwin on the 10th December, 1919. Several other praiseworthy attempts were made, notably that of Lieutenant R. Parer, who completed the journey, and that of Captain G. C. Matthews, who almost succeeded.

5. Formation of Civil Aviation Department.—At a conference of Federal Ministers and State Premiers in May, 1920, it was agreed that the Commonwealth should introduce a Bill to give effect to the Convention for the Regulation of Air Navigation signed in Paris on the 13th October, 1919.

The Air Navigation Act became law on the 2nd December, 1920, and the Civil Aviation Department was formed under Lieut.-Col. H. C. Brinsmead, O.B.E., M.C., who was appointed Controller of Civil Aviation on the 16th December, 1920. The Regulations under the Air Navigation Act were gazetted on the 11th February, 1921.

6. Activities of Civil Aviation Department.—(i) *Aerodromes and Landing-grounds.* Amongst the earlier activities of the Civil Aviation Department were the acquisition and preparation of civil aviation landing grounds which have been established on the following routes :—

- (a) Adelaide to Sydney ;
- (b) Sydney to Brisbane ;
- (c) Charleville to Cloncurry (Queensland).

Aerodromes at Sydney and Brisbane have been compulsorily acquired at an estimated cost of £20,000, but payment has been deferred pending further negotiations as to the amount. Preliminary surveys have been carried out along the following routes, but no expense has yet been incurred in the preparation of landing-grounds :—

- (a) Melbourne to Charleville (Queensland) *via* Cootamundra, Narromine, Bourke (New South Wales), and Cunnamulla (Queensland) ;
- (b) Melbourne to Perth ;
- (c) Adelaide to Port Lincoln (for seaplanes) ;
- (d) Melbourne to Hay (New South Wales).

Altogether 55 landing grounds have been acquired or leased and prepared for civil aviation purposes.

(ii) *Aerial Mail Services.* (a) *General.* Contracts have been entered into by the Commonwealth Government for the establishment and maintenance of mail services by aeroplane over certain approved routes within Australia under subsidy from Government funds allocated for the development of civil aviation. The contractors for these services must provide and reserve space sufficient to accommodate 100 lbs. of mail matter. All space other than that reserved for mails is to be at the disposal of the contractor, but the charges for the conveyance of passengers and goods must be on a scale agreed to by the Minister for Defence. The Postmaster-General has approved of the services being availed of for the conveyance of first-class mail matter, provided that only such matter be carried as is superscribed for transmission by aerial service, and bears in postage stamps a special fee at the rate of 3d. per $\frac{1}{2}$ ounce or portion thereof in the case of letters, and 3d. each in the case of letter cards and post cards, in addition to the ordinary rate of postage. The extra amount received by the Postmaster-General's Department less any expenditure incurred by that Department in the handling of aerial mails is paid to the Defence Department as a credit to revenue.

(b) *Geraldton-Derby (Western Australia) Service.* The Geraldton-Derby service was to have commenced on the 5th December, 1921, but was suspended as a result of an accident on that date, and an interim service was substituted between Geraldton and Port Hedland from the 21st February, 1922, until the 6th April, 1922, when the full Geraldton-Derby service was brought into operation. The service has been maintained since the last-mentioned date with approximately 100 per cent. efficiency, the volume of passenger traffic and mail matter carried showing a steady increase. An extension of the contract for this service for a further period of twelve months was granted to Western Australian Airways Ltd. on the 5th December, 1922.

(c) *Charleville-Cloncurry (Queensland) Service.* The Charleville-Cloncurry Service was commenced on the 2nd November, 1922. It is intended to use a number of modern eight-passenger-machines which have been ordered from England, but in the meantime the reserve machines have been placed in commission.

(d) *Sydney-Adelaide Service.* It is anticipated that the service connecting Sydney and Adelaide will be initiated before the end of 1923.

(e) *Particulars of All Services.* Particulars of the services in respect of which contracts have been entered into are as follows :—

AERIAL MAIL SERVICES.—AUSTRALIA, 1922.

Description of Service.	Distance in Miles.	Frequency of Service.	Places between which Service is maintained.	Term of Service and Subsidy.
1. Sydney (N.S.W.)—Adelaide (S.A.) —Larkin Aircraft Supply Co. Ltd., of Melbourne	760	Weekly each way	Sydney, Cootamundra, Narrandera and Hay (N.S.W.), Mildura (V.), Adelaide (S.A.)	Twelve months from date not yet fixed. Subsidy, £17,500
2. Sydney (N.S.W.)—Brisbane (Qld.) —F. L. Roberts, of Brisbane	550	Weekly each way	Sydney, Newcastle, Kempsey, Grafton, and Ballina (N.S.W.), Brisbane (Qld.)	Twelve months from date not yet fixed. Subsidy, £11,500
3. Charleville (Qld.)—Cloncurry (Qld.) — Queensland and Northern Territory Aerial Services Ltd., of Longreach, Qld.	575	Weekly each way	Charleville, Tambo, Blackall, Longreach, Winton and McKinlay (Qld.)	Twelve months from 2nd November, 1922. Subsidy, £12,000
4. Geraldton (W.A.)—Derby (W.A.) —Western Australian Airways Ltd.	1,195	Weekly each way	Geraldton, Carnarvon, Onslow, Roebourne, Port Hedland, Broome, and Derby (W.A.)	Twelve months, commencing 5th December, 1922. Subsidy, £25,000

These services will doubtless be followed by many others within the next few years. The excellent climatic conditions, the long distances between centres of commercial activity, and the large expanses of country devoid of mountains render Australia especially suitable for the operations of this latest method of transport and communication.

(f) *Landing-Grounds and Workshops.* In connexion with the aerial mail services it is the practice of the Defence Department to provide properly prepared landing-grounds, but the contractor is required to provide hangars and workshops along the route as specified in the contract. If these are erected on the landing-ground a nominal rental is charged by the Department.

7. **Statistics.**—The collection and compilation of aircraft statistics were undertaken by this Bureau on the 1st July, 1922. The subjoined table gives a summary of operations for the six months ended 31st December, 1922 :—

AIRCRAFT.—SUMMARY, SIX MONTHS ENDED 31st DECEMBER, 1922.

Particulars.	State in which Aeroplanes are Located.					Total.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	
Companies or persons owning aircraft .. No.	11	11	5	1	2	30
Aeroplanes .. No.	18	23	9	1	8	59
Staff employed(a)—						
Certificated pilots .. No.	6	12	4	1	5	28
Others .. No.	5	27	4	1	16	53
Flights carried out .. No.	627	1,587	344	6	449	3,013
Hours flown ..	176 h. 4 m.	383 h. 38 m.	313 h. 0 m.	5 h. 30 m.	821 h. 55 m.	1,700 h. 7 m.
Approx. mileage .. miles	11,333	27,815	21,413	360	65,418	126,339
Passengers carried—						
Paying .. No.	891	1,107	84	..	269	2,351
Non-paying .. No.	99	465	157	3	292	1,016
Total .. No.	990	1,572	241	3	561	3,367
Goods, weight carried lbs.	..	..	1,495	..	2,927	4,422
Mails, letters carried No.	..	..	(b)2,577	..	60,238	62,815
Accidents involving						
Injuries to <i>personnel</i> No.	..	..	..	..	..	..
Damage to aircraft No.	4	1	..	1	2	8

(a) Monthly average.

(b) For two months.

In future issues of this work it is intended to publish information of a similar character to the foregoing for each financial year.

8. **Customs Regulations.** During the 1923 session of the Commonwealth Parliament a Bill for an Act to amend the Customs Act 1901–1922 was introduced with a view to treating aircraft in the same manner as merchant shipping in regard to Customs entries and clearances.

E. MOTOR VEHICLES.

1. **Registration.**—(i) *General.* The arrangements for the registration of motor-vehicles and the licensing of drivers and riders thereof are not uniform throughout Australia. The following statement indicates the procedure obtaining in each of the States, the fees for registration and licensing, and the amount of motor tax payable where such tax is not incorporated in the registration fees.

It should be mentioned that before a licence to drive a motor-car or a motor-cycle is issued, the applicant must, by passing the prescribed test, satisfy the competent authority that he is capable of driving or riding the vehicle concerned.

(ii) *New South Wales.* The Motor Traffic Act 1909, which is administered by the Inspector-General of Police, provides for the registration of all motor-vehicles of under 5 tons weight unladen, and the licensing of drivers, the annual fees payable being as follows :—

Motor-vehicles, including Tricars, but excluding motor cycles ..	£1	0	0
Motor-cycles .. .. .	..	0	2 6
Licences—Motor-drivers .. .. .	..	0	5 0
Motor-cycle-riders .. .. .	..	0	2 6
Learners' permits (available one month) .. .. .	..	0	2 6

A Motor Tax is imposed under the provisions of the Motor Vehicles (Taxation) Act 1916 on all motor-vehicles on a horse-power basis as follows :—

Of and under 12 horse-power	..	..	..	£2 per annum
Over 12, of, and under, 16 horse-power	..	..	..	£3 „
„ 16 „ „ 26 „	..	..	..	£4 „
„ 26 „ „ 33 „	..	..	..	£7 „
„ 33 „ „ 40 „	..	..	..	£10 „
„ 40 „ „ 60 „	..	..	..	£15 „
„ 60 horse-power	..	..	..	£20 „
Any motor-vehicle (other than a motor-cycle) which is propelled by electricity	..	..	..	£4 „
Any motor-cycle or tricycle and taxi-cab	..	..	..	£1 „

Half the above rates are payable in respect of one motor-car owned and used either by a medical practitioner or a clergyman for the purposes of their respective professions ; for motor-cars used solely for private hiring ; for public motor-cars except taxi-cabs ; and trade motor-vehicles.

The horse-power of motor-vehicles is, for the purpose of assessing the tax, determined by squaring the internal diameter in inches of the cylinders, multiplying by the number of cylinders, and dividing the resultant figures by 2.5.

Licences for public vehicles are issued under the Metropolitan Traffic Act 1900–1913, the annual fees payable being £2 in the case of motor omnibuses ; £1 each for taxi-cabs and motor-vans ; and for drivers' and conductors' licences 5s. each per annum. Under the Motor Tax Act 1916 fees are payable annually in respect of such public vehicles as follows :—Motor-omnibuses and vans, half the tax payable for private motor-vehicles of the same horse-power, and for taxi-cabs a flat rate of £1.

(iii) *Victoria*. The registration of motor-vehicles and the licensing of drivers and riders is controlled by the Chief Commissioner of Police under the provisions of the Motor Car Act 1915. The fees payable per annum for the registration of motor-vehicles and the licensing of drivers and riders are as follows :—

	£	s.	d.
Motor-cycles	0	5	0
Motor-cars, not exceeding $6\frac{1}{2}$ horse-power	1	1	0
„ exceeding $6\frac{1}{2}$ but not exceeding 12 horse-power	2	2	0
„ „ 12 „ „ 16 „	3	3	0
„ „ 16 „ „ 26 „	4	4	0
„ „ 26 „ „ 33 „	5	5	0
„ „ 33 horse-power	6	6	0
Motor-vehicles used exclusively for the conveyance of goods or burden in course of trade	3	3	0
Driver's licence	0	2	6

(iv) *Queensland*. The Main Roads Board controls the registration of motor vehicles within the State, but the licensing of drivers and riders is under the jurisdiction of the Commissioner of Police. The fees payable per annum for the registration of motor-vehicles, exclusive of motor-cycles but including motor-tricycles, are calculated on a “power-weight,” or “power-weight-load” basis according to the nature of the vehicle. In the case of motor-vehicles fitted with pneumatic tyres on all wheels, the range is from £2 4s. for 25 “power-weights” to £22 for 200 “power-weights” or over. In respect of those vehicles fitted with solid tyres, the range is £1 13s. for 25 “power-weight-loads” to £23 18s. 6d. for 300 “power-weight-loads” or over, while $33\frac{1}{3}$ per cent. is added to the latter rates if the vehicles are fitted with solid tyres other than rubber.

The formulæ for ascertaining the “power-weights” and “power-weight-loads” of vehicles for the purpose of assessing the registration fees are :—

“Power-weights” = weight in cwt. of vehicle ready for use plus the horse-power prescribed for the particular make of vehicle.
(P.W.)

“Power-weight-loads” = as for “power-weights” plus the weight in cwt. of the maximum load the vehicle is capable of carrying.
(P.W.L.)

Motor-cycle registration fees are 15s., with 10s. extra when side-cars are fitted.

The registration of steam-propelled motor-vehicles is also controlled by the Main Roads Board, the fees payable being calculated in a similar manner as in the case of internal-combustion vehicles.

Traction-engines are registered under the provisions of the "Traction Engines Regulations 1921" under the "Main Roads Act," the fee payable being £3 3s.

In addition to the registration of motor-vehicles with the Main Roads Board, the owners of those vehicles which are used, kept or let for hire in any traffic district proclaimed under the provisions of the Traffic Acts 1905 to 1916, are required to obtain a licence in respect of every such vehicle.

The driver of any motor-vehicle and the rider of every motor-cycle must obtain a licence from the Commissioner of Police before using any such vehicle or cycle within a Traffic District.

(v) *South Australia.* Under the provisions of the Motor Vehicles Act 1921, and Motor Vehicles Act Amendment Act of 1922, the fees prescribed for the registration of motor-cycles and motor-vehicles other than motor-cycles are 2s. 6d. and 10s. respectively, and for licences to drive motor-cars or ride motor-cycles 5s. and 2s. 6d. respectively. These latter fees are payable on 1st July each year. For licences issued between 1st January and 30th June, half the above fees are payable.

The Motor Vehicle Tax Act 1907 prescribes the following annual taxes in respect of all motor-vehicles which are not motor-tricycles or cycles:—

						£	s.	d.
Not exceeding 12 horse-power	..	..	..	..	..	2	10	0
Exceeding 12 horse-power but not exceeding 16 horse-power	..				..	3	5	0
„ 16	„	„	„	26	„	4	0	0
„ 26	„	„	„	33	„	6	5	0
„ 33	„	„	„	40	„	8	10	0
„ 40	„	„	„	60	„	12	5	0
„ 60	„	..	..	..	..	16	0	0
Any other motor-vehicle excepting motor-tricycles or cycles	..				..	4	0	0
Any motor-tricycle or cycle	..	..	..	..	..	1	0	0

(vi) *Western Australia.* Motor-vehicle registrations are effected under the Traffic Act 1919 in the metropolitan area by the Commissioner of Police as agent for the Minister of Works who is the licensing authority, the fees payable annually in respect thereof being, as in the case of Queensland, calculated on a "power-weight" and "power-load-weight" basis according to the nature of the vehicles, and ranging from £2 for vehicles not exceeding 25 "power-weights" to £10 for those over 60 "power-weights." For motor-wagons, etc., the range is from £4 for vehicles not exceeding 30 "power-load-weights" to £21 for those exceeding 200 "power-load-weights." The annual fee payable for the registration of solo motor-cycles is 15s., and for combination-outfits 7s. 6d. per wheel irrespective of the "power-weight."

The formulæ for ascertaining the "power-weight" and "power-load-weight" are similar to those operative in the State of Queensland.

Licences to drive motor-vehicles or ride motor-cycles are also issued by the Commissioner of Police at an annual fee of 5s.

The registration of motor vehicles in municipalities or Road Board Districts outside the metropolitan area is vested in the authorities of the particular Local Government area in which the vehicle-owner applies for registration.

(vii) *Tasmania.* The Motor Traffic Act 1907 which is administered by the Commissioner of Police provides for the registration of all motor-vehicles and the licensing of riders and drivers thereof. The fees payable for the registration or renewal of registration of motor-cycles and motor-vehicles other than motor-cycles are 10s. and £1 respectively. Licences to ride motor-cycles and to drive motor-vehicles other than motor-cycles are issued on payment of an annual fee of 5s. and 10s. respectively.

The tax which is imposed under the provisions of the Motor Vehicles Tax Act 1923 on all motor-vehicles other than a motor-cycle propelled wholly or partly by an internal-combustion engine, is calculated on the product of the horse-power of the vehicle into the weight unladen expressed in tons and decimals of a ton. The horse-power is determined on the same formula as is in force in the State of New South Wales.

The scale of tax payable annually is as follows:—

Where the product				£	s.	d.
Does not exceed	9	..	..	2	0	0
Exceeds 9 but not	16	..	..	3	0	0
„	16	„	30	4	0	0
„	30	„	50	5	0	0
„	50	„	80	7	0	0
„	80	„	120	12	0	0
„	120	..	..	15	0	0

The tax in respect of every motor-cycle is £1.

Where vehicles are propelled by steam or electricity the annual tax is based on the weight unladen, and ranges from £4 in cases where the weight does not exceed $1\frac{1}{2}$ tons, to £20 where the weight exceeds 5 tons.

Vehicles fitted with one or more rubber tyres not being pneumatic are taxed an additional 25%, and those vehicles which have one or more solid tyres not being of rubber are taxed an additional 100% on the above rates.

2. Public Vehicles.—In all the capital cities of the States and in many of the most important provincial centres taxi-cabs ply for hire under licence granted either by the Commissioner of Police or the Local Government authority concerned. In addition, there is a considerable number of motor-omnibuses operating over routes more or less definitely laid down between the capital cities and their suburbs. These services are firmly established in Sydney (New South Wales), in which city, at the end of the year 1921–22, there were about 100 omnibuses in operation. About 1,500,000 'bus-miles were run, and approximately 5,000,000 passengers were carried during the year.

3. Vehicles Registered, etc., 1922.—Particulars of the registration of motor-vehicles, etc., for the year 1922 are contained in the subjoined table:—

MOTOR VEHICLES.—SUMMARY, 1922.

State.	Year ended—	Registrations.			Riders' and Drivers' Licences issued.	Revenue obtained.
		Motor Cars, etc.	Motor Cycles.	Total.		
		No.	No.	No.	No.	£
New South Wales ..	31·12·22	39,227	12,143	51,370	80,245	224,547
Victoria ..	30·6·22	27,232	12,406	39,638	43,701	119,877
Queensland ..	30·6·22	11,643	2,164	13,807	(a)	48,938
South Australia ..	30·6·22	15,898	7,784	23,682	21,632	66,961
Western Australia (b) ..	30·6·22	2,161	1,206	3,367	4,398	(a)
Tasmania ..	30·6·22	3,109	1,875	4,984	6,101	16,236
All States (c) .. ..	.. ..	99,270	37,578	136,848	156,077	476,559

(a) Not available.

(b) Metropolitan traffic district only.

(c) Incomplete.

4. **Comparative Motor Vehicle Statistics, 1921.**—The following statement, which has been extracted from the United States Department of Commerce World Census of Automotive Vehicles, published in Commerce Report No. 7 of the 12th February, 1923, shows the number of motor cars and trucks, and motor-cycles in several of the most important countries of the world. The figures, which are for the year 1921, except where otherwise stated, are in some instances approximate, being based on the estimates of the Commerce Bureau officials in the various countries.

COMPARATIVE MOTOR VEHICLE STATISTICS, 1921.

Country.					Motor Cars and Trucks.	Motor Cycles.
Australia (1922)	..	..	..	..	99,270	37,578
Argentina	..	..	..	..	78,413	2,500
Belgium	..	..	..	..	36,000	20,300
Brazil ..	..	..	..	..	25,000	1,084
Canada	..	..	..	..	509,670	9,713
Cuba ..	..	..	..	..	33,800	250
Denmark	..	..	..	..	22,260	14,241
France	..	..	..	..	295,876	45,995
Germany (1922) ..	..	..	..	..	128,092	37,941
India ..	..	..	..	..	36,529	12,133
Italy ..	..	..	..	..	53,600	31,600
Mexico	..	..	..	..	20,734	2,226
Netherlands	..	..	..	..	22,740	25,000
New Zealand	..	..	..	..	37,500	25,000
South African Union	..	..	..	..	26,978	15,305
Spain ..	..	..	..	..	41,000	4,000
Sweden (1922) ..	..	..	..	..	29,478	16,270
United Kingdom	..	..	..	..	498,271	335,796
United States of America	..	..	..	..	12,357,376	210,000

The estimated total number of motor-vehicles in 1921 as disclosed by the World's Census of Automotive Vehicles was 14,612,181 cars and trucks and 893,627 motor-cycles.

The figures quoted for Australia have been compiled from data supplied by the responsible registration authorities in the several States, and differ slightly from those contained in the United States Department of Commerce Report.

F. POSTS. TELEGRAPHS AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—In previous issues of the Year Book some account was given of the procedure in connexion with the transfer to the Federal Government of the postal, telegraphic, and telephonic facilities of the separate States. (See Year Book No. 15, p. 601.)

Under the provisions of the Commonwealth Post and Telegraph Act 1901 the Commonwealth Postal Department was placed under the control of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General.

2. **Postal Matter Dealt With.**—(i) *Australia.* In the following table the matter dealt with from 1917–18 to 1921–22 is divided into (i) matter posted in Australia for delivery therein, (ii) matter received from overseas, (iii) matter despatched overseas, and

(iv) total postal matter dealt with by the Commonwealth Postal Department. Although mail matter posted in Australia for delivery therein is necessarily handled at least twice, only the numbers despatched are included in the table following, which consequently gives the number of distinct articles handled.

POSTAL MATTER DEALT WITH.—AUSTRALIA, 1917-18 TO 1921-22.

Year ended 30th June—	Letters and Post-cards.		Newspapers.		Packets.		Parcels.		Registered Articles.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.

POSTED WITHIN AUSTRALIA FOR DELIVERY THEREIN.

1918 ..	483,048	97,876	116,899	23,686	42,455	8,602	4,421	896	4,677	948
1919 ..	485,452	96,502	122,116	24,275	39,039	7,760	4,863	967	4,741	942
1920 ..	526,261	100,297	119,448	22,765	38,140	7,269	5,434	1,036	5,313	1,013
1921 ..	512,021	94,603	117,824	21,770	47,567	8,789	6,633	1,226	5,664	1,046
1922 ..	507,239	91,099	126,165	22,659	56,622	10,169	8,284	1,488	5,516	991

OVERSEA RECEIVED.

1918 ..	48,961	9,920	7,152	1,449	2,099	425	278	56	537	109
1919 ..	38,708	7,695	7,194	1,430	2,582	513	428	85	510	101
1920 ..	36,493	6,955	7,799	1,486	2,119	404	339	65	425	81
1921 ..	35,804	6,615	8,931	1,650	2,440	451	371	69	415	77
1922 ..	30,912	5,552	9,770	1,755	2,674	480	339	61	410	74

OVERSEA DESPATCHED.

1918 ..	44,942	9,106	10,896	2,208	2,826	573	1,179	239	357	72
1919 ..	29,550	5,874	7,360	1,463	1,907	379	770	153	281	56
1920 ..	20,705	3,946	3,838	731	1,495	285	163	31	270	51
1921 ..	21,519	3,976	4,128	763	1,402	259	188	35	305	57
1922 ..	23,822	4,278	4,542	816	1,299	233	176	32	286	51

TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL DEPARTMENT.

1918 ..	576,951	116,902	134,947	27,343	47,380	9,600	5,878	1,191	5,571	1,129
1919 ..	553,710	110,071	136,670	27,168	43,528	8,652	6,061	1,205	5,532	1,099
1920 ..	583,459	111,198	131,085	24,982	41,754	7,958	5,936	1,132	6,008	1,145
1921 ..	569,344	105,194	130,883	24,183	51,409	9,499	7,192	1,330	6,384	1,180
1922 ..	561,973	100,929	140,477	25,230	60,595	10,882	8,799	1,581	6,212	1,116

The decrease in overseas mail matter received and despatched since 1918 is mainly attributable to the return of Australian troops from abroad.

(ii) *Postal Matter dealt with.—States.* The following table shows separately for each State the postal matter dealt with in 1921-22 under the classification adopted in the preceding paragraph with the exception of registered articles, which are dealt with

separately hereinafter. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory. Similarly, the returns for the Federal Territory are included in those for New South Wales.

POSTAL MATTER DEALT WITH.—STATES, 1921–22.

State.	Letters and Post-cards.		Newspapers.		Packets.		Parcels.	
	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.	Number (,000 omitted).	Per 1,000 of Popula- tion.
New South Wales	213,947	99,499	60,281	28,034	19,609	9,119	3,680	1,674
Victoria ..	149,922	95,453	27,632	17,593	10,387	6,613	1,909	1,210
Queensland ..	57,152	72,763	19,622	24,982	10,622	13,523	1,476	1,879
South Australia	38,496	75,670	7,297	14,344	9,999	19,655	611	1,201
Western Australia	26,585	78,306	5,372	15,823	4,020	11,841	450	1,325
Tasmania ..	21,137	99,049	5,961	27,933	1,985	9,302	158	740
Australia ..	507,239	91,099	126,165	22,659	56,622	10,169	8,284	1,488

POSTED FOR DELIVERY WITHIN COMMONWEALTH.

New South Wales	213,947	99,499	60,281	28,034	19,609	9,119	3,680	1,674
Victoria ..	149,922	95,453	27,632	17,593	10,387	6,613	1,909	1,210
Queensland ..	57,152	72,763	19,622	24,982	10,622	13,523	1,476	1,879
South Australia	38,496	75,670	7,297	14,344	9,999	19,655	611	1,201
Western Australia	26,585	78,306	5,372	15,823	4,020	11,841	450	1,325
Tasmania ..	21,137	99,049	5,961	27,933	1,985	9,302	158	740
Australia ..	507,239	91,099	126,165	22,659	56,622	10,169	8,284	1,488

OVERSEA RECEIVED.

New South Wales	10,397	4,836	3,571	1,661	666	310	134	62
Victoria ..	13,946	8,879	2,396	1,526	643	409	90	57
Queensland ..	2,522	3,211	1,781	2,267	519	661	57	73
South Australia	1,616	3,177	597	1,173	268	527	25	49
Western Australia	1,624	4,783	951	2,801	387	1,140	25	74
Tasmania ..	807	3,782	474	2,221	191	395	8	37
Australia ..	30,912	5,552	9,770	1,755	2,674	480	339	61

OVERSEA DESPATCHED.

New South Wales	13,501	6,279	2,530	1,177	768	357	94	44
Victoria ..	4,743	3,020	1,265	805	345	220	48	31
Queensland ..	1,660	2,113	309	393	75	95	11	14
South Australia	868	1,706	168	330	50	98	9	18
Western Australia	1,318	3,882	150	442	23	68	12	35
Tasmania ..	1,732	8,351	120	562	38	178	2	9
Australia ..	23,822	4,278	4,542	816	1,299	233	176	31

3. **Postal Facilities.**—(i) *Relation to Area and Population.* The subjoined statement shows the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in Australia at the end of the year 1921–22. In order to judge clearly the relative postal facilities provided in each State, the area of country to each office, as well as the number of inhabitants per office, should be taken into account.

**POSTAL FACILITIES.—RELATION TO AREA AND POPULATION,
30th JUNE, 1922.**

State.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
Number of post and receiving offices	2,588	2,576	1,241	805	668	503	8,381
Number of square miles of territory to each office in State	120	34	540	1,123	1,461	52	355
Number of inhabitants to each office	831	610	633	632	508	424	664
Number of inhabitants per 100 square miles	693	1,787	117	56	35	814	187

(ii) *Number of Offices.* The following table shows the numbers of post and receiving offices in each year from 1917-18 to 1921-22 inclusive :—

POST AND RECEIVING OFFICES AT 30th JUNE, 1918 TO 1922.

State.	Year ended 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales ..	2,031	548	2,037	562	2,034	559	2,031	578	2,032	556
Victoria ..	1,726	878	1,715	854	1,707	829	1,712	864	1,721	855
Queensland ..	643	659	640	643	645	627	658	604	665	576
South Australia ..	670	143	666	125	674	118	670	127	666	139
Western Australia ..	407	212	402	201	402	209	405	222	414	254
Tasmania ..	396	85	406	83	405	83	409	89	413	90
Australia ..	5,873	2,525	5,866	2,468	5,867	2,425	5,885	2,484	5,911	2,470

(iii) *Employees and Mail Contractors.* The number of employees and mail contractors in the Central Office and in each of the States is given in the appended table :—

EMPLOYEES AND MAIL CONTRACTORS, 1918 TO 1922.

State.	Year ended 30th June—									
	1918.		1919.		1920.		1921.		1922.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
Central Office ..	92	..	84	..	83	..	(a)139	..	87	..
New South Wales ..	11,684	1,972	11,732	1,964	11,334	1,912	11,669	2,046	12,451	2,087
Victoria ..	8,249	1,105	8,499	1,112	7,962	1,089	8,117	1,091	8,553	1,095
Queensland ..	4,477	794	4,289	787	4,778	723	4,728	750	4,792	766
South Australia ..	2,737	368	2,768	350	2,679	427	2,826	439	2,895	441
Western Australia ..	2,462	271	2,258	264	2,110	286	2,111	302	2,200	338
Tasmania ..	1,212	250	1,173	227	1,156	227	1,220	223	1,229	236
Australia ..	30,913	4,760	30,803	4,704	30,102	4,664	30,810	4,851	32,207	4,963

(a) Includes "radio staff."

4. Rates of Postage.—(i) *General.* Under the provisions of the Postal Rates Act of 1910, which became operative from 1st May, 1911, the rates of postage were made uniform in all States. An amendment to this Act in 1920 provided for the rates quoted

hereunder for mail matter posted in Australia for internal delivery and for despatch overseas in respect of the various classes of mail matter. Owing to space limitations, particulars are not given in regard to third-class mail matter, as no change has taken place in the rates during the past year.

- (a) First-class mail matter consists of letters, lettercards, and post-cards.
- (b) Second-class mail matter—Commercial and printed papers; patterns, samples, and merchandise; books, and catalogues.
- (c) Third-class mail matter—Newspapers registered for transmission as such, and magazines.
- (d) Fourth-class mail matter—Parcels forwarded by parcels post and articles irregularly posted as second-class matter and which are officially treated as parcels.

(ii) *Postal Rates.* (a) *First and Second-class Mail Matter.* The subjoined tabular statement gives the postage rates for first and second-class mail matter posted in Australia for inland delivery and for despatch overseas :—

POSTAL RATES, 1922.

Postal Article.	Rates of Postage.		
	For Inland Delivery.	For Despatch Overseas.	
		British Empire.	Foreign Countries.
First class mail matter— Letters	2d. per $\frac{1}{2}$ ounce ..	2d. per $\frac{1}{2}$ ounce ..	4d. for first ounce and 2d. each additional ounce or part
Lettercards { Single ..	2d. each ..	2d. each ..	4d. each
{ Reply ..	2d. each half ..	2d. each half ..	4d. each half
Postcards { Single ..	1 $\frac{1}{2}$ d. each ..	1 $\frac{1}{2}$ d. each ..	2d. each
{ Reply ..	1 $\frac{1}{2}$ d. each half ..	1 $\frac{1}{2}$ d. each half ..	2d. each half
Second class mail matter— Commercial papers (as prescribed)	1 $\frac{1}{2}$ d. per 2 ounces or part	New Zealand and Fiji— 1 $\frac{1}{2}$ d. per 2 ounces or part Other British Countries— As above (minimum 3d.)	1 $\frac{1}{2}$ d. per 2 ounces or part (minimum 4d.)
Patterns, Samples, and Merchandise (as prescribed)	1 $\frac{1}{2}$ d. per 2 ounces or part	1 $\frac{1}{2}$ d. per 2 ounces or part	1 $\frac{1}{2}$ d. per 2 ounces or part (Parcels rates apply to Merchandise)
Printed Papers (as prescribed)	1d. per 2 ounces or part	1d. per 2 ounces or part	1 $\frac{1}{2}$ d. per 2 ounces or part
Books—			
Printed in Australia	1d. per 8 ounces or part	} 1d. per 4 ounces or part	1 $\frac{1}{2}$ d. per 2 ounces or part
Printed outside Aus- tralia	1d. per 4 ounces or part		
Catalogues	Wholly set up and printed in Australia —1 $\frac{1}{2}$ d. per 4 ounces or part	1d. per 2 ounces or part	1 $\frac{1}{2}$ d. per 2 ounces or part

(b) *Third-class Mail Matter.* Information in respect of the postage rates for magazines and newspapers was given in Year Book No. 15, and the rates quoted there are still in force.

(c) *Fourth-class Mail Matter.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 feet in length and girth combined. The rate for the inland postage of parcels is 6d. up to 1 lb., and then 3d. for every additional pound. For Inter-State, New Zealand, Fiji, and Papua the rate is 8d. up to 1 lb., and then 6d. per lb., and for transmission to the United Kingdom the rate is 1s. 4d. up to 1 lb., and 6d. for every additional pound. Various rates are charged for the conveyance of parcels to other parts of the world.

5. *Registered Letters, Packets, etc.*—(i) *General.* Under section 38 of the *Post and Telegraph Act 1901*, provision is made for the registration of any letter, packet, or newspaper upon payment of a fee of 3d., and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying an additional fee of 3d. in advance at the time of registration.

(ii) *Number of Registered Articles.* The subjoined table shows the number of registered articles posted in each State, classified according to the places to which they were despatched for delivery, also the number of registered articles received in each State from overseas during the year 1921–22 :—

REGISTERED ARTICLES POSTED AND RECEIVED, 1921–22.

State.	Posted in each State for Delivery within Australia.		Posted in each State for Delivery Overseas.		Total Posted.		Received in each State from Overseas.	
	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.	Number (,000 omitted).	Per 1,000 of Population.
New South Wales ..	1,926	896	129	60	2,055	956	188	87
Victoria ..	1,530	974	77	49	1,607	1,023	120	76
Queensland ..	849	1,081	33	42	882	1,123	38	48
South Australia ..	505	993	18	35	523	1,028	27	53
Western Australia ..	438	1,290	24	71	462	1,361	28	82
Tasmania ..	269	1,261	5	23	274	1,284	9	42
Australia ..	5,517	991	286	51	5,803	1,042	410	74

6. *Value-Payable Parcel and Letter Post.*—(i) *General.* The Postal Department undertakes to deliver registered articles sent by parcel post within Australia, or between Papua and Australia, to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of 2d. on sums not exceeding 10s., and 1d. for each additional 5s. or part thereof, must be prepaid by postage stamps affixed to the articles, distinct from the postage, and marked “commission.” The registration fee (3d.) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel-post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk, in the same manner as in the case of parcels.

(ii) *Summary of Business.* The subjoined statement gives particulars of the number and value of parcels sent through the Value-Payable Post in each State during the years 1918 to 1922 :—

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
NUMBER OF PARCELS POSTED.							
1918	No. 21,962	No. 1,204	No. 63,523	No. 473	No. 23,421	No. 37	No. 110,620
1919	28,544	1,579	68,601	588	24,211	22	123,545
1920	38,713	2,134	94,733	666	29,628	76	165,950
1921	53,829	3,192	120,045	689	36,125	155	214,035
1922	93,621	4,092	171,848	606	48,187	111	318,465

VALUE-PAYABLE PARCELS POST.—SUMMARY, 1918 TO 1922—*continued.*

Year ended 30th June.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
VALUE COLLECTED.							
	£	£	£	£	£	£	£
1918	37,813	2,310	88,388	1,089	37,155	97	166,852
1919	54,876	3,003	98,882	1,492	38,244	72	196,569
1920	85,055	3,804	137,976	2,555	46,964	336	276,690
1921	124,502	6,105	177,662	2,027	57,170	711	368,177
1922	172,258	8,086	238,047	1,694	81,370	444	501,899

REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

	£	£	£	£	£	£	£
1918	3,338	153	8,839	70	3,165	5	15,570
1919	3,917	223	9,637	82	3,275	4	17,138
1920	5,435	331	13,076	106	4,000	15	22,963
1921	8,502	446	16,102	103	4,966	32	30,151
1922	12,144	549	22,214	177	6,259	47	41,390

The number of parcels forwarded in Queensland is in excess of the combined transactions of all the other States, chiefly owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office. The system has also found favour for a number of years in Western Australia, and continues to make marked progress in New South Wales, but the amount of business transacted in South Australia and Tasmania remains negligible. The Victorian business has more than trebled itself during the period under review.

The average value collected in each of the States for the five years 1917–18 to 1921–22 was New South Wales £2 0s. 1d., Victoria £1 18s. 2d., Queensland £1 8s. 7d., South Australia £2 18s. 7d., Western Australia £1 12s. 4d., Tasmania £4 2s. 9d., and for Australia £1 12s. 5d.

7. Sea-borne Mail Services.—(i) *Summary.* In previous issues of this work statements regarding the development of the principal sea-borne mail services were included, but owing to the restrictions of space this information cannot be repeated. The following tabular summary, however, contains the latest available information in respect of the Australian sea-borne mail services :—

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES, 1923.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Ports in New South Wales—</i>			
(i) NORTHERN PORTS—			
(a) North Coast S.N. Co.	Twice weekly	Sydney and Clarence River, Byron Bay, and Richmond River	Poundage rates
(b) " "	Fortnightly	Sydney and South Solitary Island	" "
(ii) SOUTH COAST PORTS—			
Illawarra and S. Coast S.N. Co.	Fortnightly	Sydney, Montague Island	" "
2. <i>To and from Northern Ports of Queensland—</i>			
(a) Australasian United Steam Navigation Co. Limited	Weekly	Gladstone, Mackay, Bowen, Townsville, Lucinda, Mourilyan, Cairns, Port Douglas, and Cooktown	Subsidised by agreement dated 6th Dec., 1920, for two years, and extended to 5th Dec., 1923. Amount of subsidy, £22,500, exclusive of Port and Light dues
(b) John Burke and Sons ..	Ten trips a year	Brisbane, Townsville, Cairns, Cooktown, Thursday Island, Normananton and Burketown	Subsidised from 18th November, 1921. Amount of subsidy, £2,000 per annum
(c) Other steamers ..	Irregularly	Various	Poundage rates

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
3. To and from Ports in South Australia—			
(a) Coast Steamship Co. Ltd.	Weekly	Port Adelaide and Kingscote	Subsidised to 31st December, 1925. Amount of subsidy, (a) £900; (b) £400; (c) £500; (d) £400
(b) „ „ „	Twice a week	Port Adelaide and Edithburgh	
(c) „ „ „	„	Port Adelaide and Stansbury	
(d) „ „ „	„	Port Adelaide and Port Vincent	
(e) Adelaide Steamship Co. . .	Weekly	Port Adelaide and Port Lincoln	Subsidised for three years from 1st January, 1923. Amount of subsidy, £3,000
(f) Adelaide Steam Tug Co. . .	As required	Port Pirie and Whyalla	Subsidised without agreement. Amount of subsidy, £120
4. Western Australia—			
(i) TO AND FROM PORTS ON N.W. COAST—			
(a) State Steamship Service	Monthly ..	Fremantle and Derby ..	Subsidised by agreement dated 28th February, 1913, for three years. Later extended to a date three months after expiration of war. Subsequently extended for indefinite period. Amount of subsidy, £5,500 Poundage rates
(b) „ „ „	Once each sixty days	Fremantle and Darwin	
(c) West Australian S.N. Co.	About fortnightly	Fremantle and Singapore, via N.W. Ports	
(d) Ausn. United S. Navigation Co., State S.S. Co. and Melbourne S.S. Coy.	Irregularly, during the cattle season	Fremantle, Derby, and Wyndham	
(ii) TO AND FROM PORTS ON S. COAST—			
(a) State Steamship Service	Fortnightly	Albany and Esperance..	Subsidised by agreement for three years, dating from 1st July, 1921. Amount of subsidy, £1,500
(b) „ „ „	Quarterly	Albany and Eucla, via intermediate ports	
5. Tasmania—			
(a) Tasmanian Steamers Pty. Ltd.	Three times a week summer; twice a week winter	Melbourne and Launceston	Subsidy, £30,000 per annum from 1st May, 1921, under contract for twelve months, and thereafter terminable on twelve months' notice by either party to the agreement
(b) „ „ „	Twice a week	Melbourne and Burnie	
(c) Union S.S. Co. and Huddart Parker Ltd.	Irregular ..	Sydney, Hobart, and Wellington	Poundage rates
(d) Union Steamship Co. . .	„ ..	Sydney, Launceston, and Devonport	„ „
(e) Shipping and Trading Agency Pty. Ltd.	„ ..	Launceston	„ „
(f) „ „ „	„ ..	Melbourne, Burnie, etc.	„ „
(g) Huon Channel and Peninsular Co.	Twice a week	Hobart and Kelly's Point, via Pearson's Point	Subsidised by agreement dated 1st January, 1922, for three years. Amount of subsidy, £50 per annum
(h) Tasmanian Government Shipping Department	Every two weeks	Launceston and Furneaux group of islands	Subsidised by agreement dated 1st January, 1922, for three years. Amount of subsidy, £350 per annum
(i) „ „ „	Fortnightly	Launceston and Currie, King Island	Subsidised by agreement dated 1st January, 1922, for three years. Amount of subsidy, £400 per annum
(j) Holyman Bros. Pty. Ltd.	Weekly ..	Burnie and Melbourne, via Fraser River and King Island	Poundage rates

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
6. <i>To and from Northern Territory—</i>			
(a) Burns, Philp and Co. . .	Monthly . .	To and from Adelaide and Sydney, via Queensland ports	Poundage rates
(b) State Steamship Service of Western Australia	Once each sixty days	Fremantle and Darwin	See Item 4 above
7. <i>To and from New Zealand—</i>			
(a) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Weekly	Sydney and Wellington, Sydney and Auckland	Poundage rates
(b) Other steamers . .	Irregularly, when convenient	Sydney, Wellington, Auckland, Lyttelton, and other Ports	" "
(c) " " . .	About every three weeks	Melbourne, Wellington, or Bluff	" "
8. <i>Pacific Islands—</i>			
(a) Burns, Philp and Co. . .	Every two months	Sydney to Lord Howe and Norfolk Islands and New Hebrides	Subsidised by Commonwealth
(b) " " . .	Irregularly	Sydney to Nauru and Ocean Islands, Gilbert and Ellice Groups	" "
(c) " " . .	"	Sydney to Marshall Islands	" "
(d) " " . .	Every three weeks	Sydney to Papua and Rabaul	" "
(e) " " . .	Every five weeks	Sydney to Rabaul . .	" "
(f) " " . .	Twice in six weeks	Sydney to Solomon Islands	" "
(g) " " . .	Once in six weeks	Sydney to Solomon Islands and Rabaul	" "
9. <i>New Caledonia and New Hebrides—</i>			
(a) Messageries Maritimes . .	Monthly	Sydney and Noumea and to Vila (New Hebrides)	Postal Union rates
(b) Other steamers . .	About twice a month	Sydney and Noumea . .	Poundage rates
10. <i>Fiji, Friendly Islands, and Samoa—</i>			
(a) Union S.S. Co . .	Every four weeks	Sydney and Suva . .	" "
(b) " " . .	"	Sydney, Suva, Tonga, and Samoa	" "
(c) A.U.S.N. Co. . .	"	Sydney and Suva . .	" "
11. <i>To Eastern Ports—</i>			
(a) Burns, Philp and Co. . .	Monthly	Melbourne and Sydney to Java and Singapore, via Queensland Ports and Darwin	Subsidised by Commonwealth Govt. | Mails at poundage rates
(b) China Navigation, Eastern and Ausn., and China Australian Line	About once a month	Melbourne and Sydney to Hong Kong, Manila, etc., via Queensland Ports	Poundage rates
(c) Nippon Yusen Kaisha . .	Every four weeks	Melbourne and Sydney to Manila, China, and Japan, via Queensland Ports	Postal Union rates
(d) Royal Dutch Packet S.N. Co.	Monthly	Melbourne to Java and Singapore, via Sydney and Queensland Ports	Poundage rates
(e) Various other steamers	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	" "
(f) W.A.S.N. Co. . .	About fortnightly	W.A. Ports, Java, and Singapore	" "
(g) Commonwealth Government line of steamers	About fortnightly	Sydney, Melbourne, Adelaide, Fremantle, Java, and Singapore	" "
12. <i>South Africa—</i>			
White Star, P. and O. Branch Service, and other Companies	Irregularly	Sydney, Melbourne, Adelaide, and Fremantle to Durban and Capetown	" "

SUMMARY OF AUSTRALIAN SEA-BORNE MAIL SERVICES—*continued.*

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
13. <i>To and from Europe, via Suez—</i> (a) Orient Steam Navigation Co.	Every four weeks	Brisbane, Sydney, Melbourne, Adelaide, Fremantle, and London, via Suez	Subsidy, £130,000. Commenced 20th September, 1921. Terminable on twelve months' notice by either party
(b) Peninsular and Oriental S.N. Co. Ltd.	Every four weeks	Sydney, Melbourne, Adelaide, Fremantle, and London, via Suez	Postal Union rates
14. <i>To and from Europe, via Vancouver (a)—</i> Union Steamship Co. ..	Every four weeks	Sydney and Vancouver, B.C., via Auckland, Fiji, Honolulu	Poundage rates
15. <i>To and from Europe, via San Francisco—</i> (a) Union Steamship Company	Twice in nine weeks	Sydney, Wellington, Raratonga, Tahiti, and San Francisco	Subsidised by New Zealand Govt. Mails from Aust. at Postal Union rates
(b) Oceanic Steamship Co. ..	„	Sydney, Pago Pago (Samoa), Honolulu, and San Francisco	Poundage rates
16. <i>North America—</i> (a) Various steamers ..	Irregularly	Sydney or Newcastle to San Francisco	„ „
(b) „ „ ..	„	Sydney to Guaymas (Mexico)	„ „
(c) Union S.S. Co. ..	Twice in nine weeks	Sydney, Wellington, Tahiti, and San Francisco	„ „
(d) „ „ ..	Every four weeks	Sydney, Auckland, Fiji, Honolulu, and Vancouver	„ „
(e) Oceanic S.S. Co. ..	Twice in nine weeks	Sydney, Pago Pago (Samoa), and San Francisco	„ „
17. <i>South America—</i> (a) { Oceanic S.S. Co. } { Union S.S. Co. } ..	Twice a month	Sydney, via San Francisco to ports in Chile, Brazil, Peru, Uruguay, and Argentina	„ „
(b) Various other steamers	Irregularly	Via Newcastle to various ports	„ „

(a) Carries also mails to Canada and United States.

(ii) *Average and Fastest Time of Mails to and from London.* (a) *Via Suez Canal.* During the European war steamers of the Orient S.N. Co. were diverted from the Suez Canal to the Cape route, but the former route has since been resumed by that company and by the Peninsular and Oriental S.N. Co.

In the 1921 mail contracts, Fremantle was made the mail port in Australia, and letters arriving from the United Kingdom are now landed there instead of as formerly at Adelaide. By this arrangement a saving of approximately 67 hours is effected. A service equal to that of pre-war days is not yet available, but a regular fortnightly service is assured, however, under the terms of contracts entered into between the Commonwealth Government and the Orient Steam Navigation Company, and between the Imperial Government and the Peninsular and Oriental Company. Particulars of these contracts, which date from September, 1921, will be found in Year Book No. 15.

The subjoined table shows the average and the fastest times occupied in the conveyance of mails from London to Fremantle and vice versa during the year 1921-22 :—

AVERAGE AND FASTEST TIME.—MAILS VIA SUEZ CANAL, LONDON TO FREMANTLE, AND VICE VERSA, DURING 1921-22.

Service.	London to Fremantle.				Fremantle to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Orient S. N. Co.	31	7	30	23	31	10	31	—
Peninsular and Oriental S.N. Co.	31	20	30	23	33	14	33	—

At present a mail leaving Perth by train for the Eastern States, say, at 9 p.m. on Monday, arrives at Adelaide at 7.50 p.m. on Thursday, at Melbourne at 1.3 p.m. on Friday, at Sydney at 10.45 a.m. on Saturday, and at Brisbane at 6.40 p.m. on Monday. The time over all between Perth and Brisbane is 165 hours 40 minutes, of which the stops at changing stations take 38 hours 32 minutes. The journey from Melbourne to Hobart occupies about 26 hours via Launceston, and about 32 hours direct.

(b) *Via America.* The average and fastest times occupied in the conveyance of mails between London and Sydney via America during 1921-22 were :—

AVERAGE AND FASTEST TIME.—MAILS VIA AMERICA, DURING 1921-22.

Service.				Average Time.		Fastest Time.	
				Days.	Hours.	Days.	Hours.
London to Sydney	via Vancouver	..	..	39	22	35	—
	via San Francisco (Oceanic)	..	..	42	1	35	—
Sydney to London	via Vancouver	..	..	40	2	37	—
	via San Francisco (Oceanic)	..	..	38	20½	34	—

(iii) *Amount of Mail Subsidies Paid.* The following table shows the amounts of subsidies paid by the Commonwealth Postal Department for ocean and coastal mail services during the year ended 30th June, 1922 :—

MAIL SUBSIDIES.—OCEAN AND COASTAL SERVICES, 1921-22.

Service.	Orient S. N. Co.	Queens-land Ports.	South Australian Ports.	Western Australian Ports.	Tas-manian Ports.
	£	£	£	£	£
Annual subsidy	113,337	24,038	5,320	5,578	(a) 36,497

(a) Includes £5,978 arrears from 1920-21.

During the year 1921-22 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £32,926 ; by road services, £574,633 ; and by railway services, £400,475. The total expenditure in 1922 on the carriage of mails, as disclosed by the Profit and Loss Account, amounted to £1,119,883.

8. Transactions of the Dead Letter Offices.—(i) *General.* Under sections 45 to 53 of the Post and Telegraph Act 1901, the Postmaster-General may cause to be opened all unclaimed and undelivered postal articles originally posted within Australia which have been returned from the places to which they were forwarded. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been

transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted overseas are returned to the proper authorities in the country of origin, or if originally posted in Australia are returned to the General Post Office in the State where posted. Unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing valuables are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards an opened letter or packet containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the Consolidated Revenue Fund.

(ii) *Summary.* The following table shows the total number of letters, postcards, and lettercards, and packets and circulars, including Inland, Inter-State, and International, dealt with by the Dead Letter Offices in 1921–22, and the methods adopted in their disposal.

DEAD LETTER OFFICES—SUMMARY, 1921–22.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
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LETTERS, POSTCARDS, AND LETTERCARDS.

Returned direct to writers or delivered	639,308	417,112	221,591	97,070	117,553	59,580	1,552,214
Destroyed in accordance with Act	89,631	51,095	18,403	13,961	8,663	5,622	187,375
Returned to other States or Countries as unclaimed	119,789	56,344	38,380	19,585	23,646	10,746	268,490
Total	848,728	524,551	278,374	130,616	149,862	75,948	2,008,079

PACKETS AND CIRCULARS.

Returned direct to writers or delivered	707,840	177,640	75,766	44,493	37,384	5,574	1,048,697
Destroyed in accordance with Act	129,200	222,999	29,626	46,725	1,256	426	430,232
Returned to other States or Countries as unclaimed	9,689	11,630	32,458	13,546	8,312	8,124	83,759
Total	846,729	412,269	137,850	104,764	46,952	14,124	1,562,688
Grand total (letters, packets, etc.)	1,695,457	936,820	416,224	235,380	196,814	90,072	3,570,767

9. **Money Orders and Postal Notes.**—(i) *General.* The issue of money orders and postal notes is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order may be issued for payment of sums up to £20 within Australia and not exceeding £40 (in some cases £30, £20, or £10) in places abroad. A postal note, which is payable only within Australia and in Papua, cannot be issued for a larger sum than twenty shillings. Money orders are sent direct from Australia to the United Kingdom, and to most of the British colonies and possessions, to the British Solomon Islands Protectorate and the Gilbert and Ellice Islands Protectorate, to Italy, to Norway, and to the United States of America. Money orders, payable in Japan and China, are sent via Hong Kong; orders payable in other countries, with a few exceptions, are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less twopence for each £1 or fraction of £1, with a minimum charge of fourpence. To secure the full amount of the original order being forwarded to the payee, this extra commission must be paid by the sender.

(ii) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows :—

RATES OF COMMISSION, MONEY ORDERS.

Orders Payable in.	Rates of Commission.
Australia	6d. for each £5 or fraction of £5.
New Zealand	3d. for each £1 or fraction of £1, with minimum of 6d.
Papua, Rabaul (New Guinea), Nauru, Fiji, New Caledonia	4d. for each £1, or fraction of £1, with minimum of 6d.
United Kingdom, Canada, Union of South Africa, India, Ceylon, Dutch East Indies, Egypt, Federated Malay States, Gilbert and Ellice Islands, Hong Kong, Italy, Mauritius, North Borneo, Norway, Solomon Islands, Straits Settlements, Tonga	4d. for each £1, or fraction of £1, with minimum of 9d.
United States of America (including Hawaii)	9d. for any amount up to £2 and 4d. for each additional £1 or fraction of £1.
Philippine Islands	(a) In the case of amounts not exceeding £1, 7d. for every 2s. or fraction thereof. (b) In the case of amounts exceeding £1, 6s. for each £1 and for any odd amount less than £1, 7d. for every 2s. or fraction thereof.

Remittances may also be made by telegraph to and from money order offices in Australia which are also telegraph or telephone offices, and to New Zealand. The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. Where payment is to be made within Australia the remitter must also send a telegram advising the transmission of the money, which telegram must be produced by the payee when applying for payment. In the case of New Zealand a second telegram is not required, but an additional charge of sixpence is made by the Department to cover the cost of notifying the payee.

A telegraph money order service between the United Kingdom and Australia via the Pacific Cable was inaugurated on 31st July, 1921, by agreement between the London Postal Authorities, the Commonwealth Postal Department, and the Pacific Cable Board. Under the arrangement made, a telegraph money order may be drawn by the United Kingdom on any money order office in Australia whether it is a telegraph or telephone office or not, while a telegraph money order may be drawn by Australia on any place whatsoever in the United Kingdom. An order may not be issued for a sum in excess of the maximum for a single money order to and from the United Kingdom, viz., £40.

(iii) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. The poundage or commission charged on notes of different denominations is as follows :—

POUNDAGE RATES, POSTAL NOTES.

Denomination of Note ..	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ..	$\frac{1}{2}$ d.	1d.	$1\frac{1}{2}$ d.	2d.	3d.

(iv) *Value of Orders Issued and Paid and of Notes Sold, 1921-22.* The following table shows the total value of money orders issued and paid, and of postal notes sold in each State and in Australia during the year 1921-22, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department.

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, 1921–22.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes.
	£	£	£	£	£
New South Wales ..	6,132,508	6,138,339	42,664	1,645,272	31,088
Victoria ..	2,684,447	2,897,734	18,769	1,180,819	22,924
Queensland ..	2,295,507	2,060,920	17,358	513,242	9,939
South Australia ..	841,734	751,678	6,165	262,760	5,342
Western Australia ..	1,304,747	1,091,573	9,416	244,086	4,660
Tasmania ..	543,562	472,188	3,594	121,538	2,445
Australia ..	13,802,505	13,412,432	97,966	3,967,717	76,398

The figures in the foregoing table show a general increase over the corresponding particulars for the year 1920–21.

(v) *Money Orders and Postal Notes—Summary, Australia, 1918 to 1922.* The following table shows the total number and value of money orders and postal notes issued and paid in Australia from 1917–18 to 1921–22 :—

MONEY ORDERS AND POSTAL NOTES.—SUMMARY, AUSTRALIA,
1917–18 TO 1921–22.

Year ended 30th June.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1918 ..	2,196	10,901	2,138	10,510	9,842	3,252	9,814	3,221
1919 ..	2,300	11,697	2,214	11,370	9,830	3,277	9,775	3,244
1920 ..	2,352	12,382	2,258	12,094	10,163	3,389	10,127	3,409
1921 ..	2,543	13,675	2,439	13,181	10,849	3,674	10,821	3,671
1922 ..	2,761	13,803	2,632	13,412	11,631	3,968	11,522	3,909

(vi) *Classification of Money Orders Issued and Paid.* (a) *Orders Issued.* The following table shows the number and value of money orders issued in each State during the year 1921–22, classified according to the country where payable :—

MONEY ORDERS ISSUED.—COUNTRY WHERE PAYABLE, 1921–22.

MONEY ORDERS ISSUED: COUNTRY WHERE PAYABLE, 1911-22.						
State in which Issued.		Where Payable.				Total.
		In Australia.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.						
New South Wales	..	1,133,290	10,744	71,811	12,966	1,228,811
Victoria	..	455,387	5,972	43,164	9,910	514,433
Queensland	..	450,420	1,810	26,980	7,296	486,506
South Australia	..	157,777	996	13,826	3,398	175,997
Western Australia	..	215,754	965	19,048	3,467	239,234
Tasmania	..	108,313	1,703	4,787	1,042	115,845
Australia	..	2,520,941	22,190	179,616	38,079	2,760,826
VALUE.						
		£	£	£	£	£
New South Wales	..	5,779,917	50,320	223,641	78,630	6,132,508
Victoria	..	2,474,286	24,881	136,399	48,881	2,684,447
Queensland	..	2,146,860	8,471	81,787	58,389	2,295,507
South Australia	..	776,384	4,401	44,992	15,957	841,734
Western Australia	..	1,214,198	5,745	64,433	20,371	1,304,747
Tasmania	..	520,601	8,363	11,854	2,744	543,562
Australia	..	12,912,246	102,181	563,106	224,972	13,802,505

(b) *Orders Paid.* The following table shows the number and value of money orders paid in each State during the year 1921-22, classified according to the country where issued :—

MONEY ORDERS PAID.—COUNTRY OF ISSUE, 1921-22.

MONEY ORDERS PAID.					
State in which Paid.	Where Issued.				Total.
	In Australia.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales ..	1,145,544	32,993	16,250	9,320	1,204,107
Victoria ..	513,138	18,158	9,729	4,578	545,603
Queensland ..	413,064	3,158	5,040	2,413	423,675
South Australia ..	149,880	1,340	2,849	909	154,978
Western Australia ..	196,974	2,016	4,325	1,144	204,459
Tasmania ..	92,788	3,811	1,340	1,575	99,514
Australia ..	2,511,388	61,476	39,533	19,939	2,632,336

VALUE.					
	£	£	£	£	£
New South Wales ..	5,886,805	138,090	72,807	40,637	6,138,339
Victoria ..	2,774,645	62,891	41,888	18,310	2,897,734
Queensland ..	2,017,363	13,967	22,285	7,305	2,060,920
South Australia ..	731,070	5,772	11,017	3,819	751,678
Western Australia ..	1,062,707	6,105	17,927	4,834	1,091,573
Tasmania ..	452,701	10,528	5,181	3,778	472,188
Australia ..	12,925,291	237,353	171,105	78,683	13,412,432

In the above tables money orders payable or issued in foreign countries, which have been sent from or to Australia through the General Post Office at London, are included in those payable or issued in the United Kingdom.

(vii) *Classification of Postal Notes Paid.*—The subjoined table shows the number and value of postal notes paid during the year 1921-22, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid in each of the last five years have been given previously.

POSTAL NOTES PAID.—STATE OF ISSUE, 1921-22.

Particulars.	Postal Notes Paid in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
NUMBER.							
Issued in same State ..	3,350,043	2,340,742	1,200,959	556,460	554,819	282,203	8,285,226
Issued in other States ..	411,333	338,118	390,835	59,004	25,967	2,011,644	3,236,901
Total ..	3,761,376	2,678,860	1,591,794	615,464	580,786	2,293,847	11,522,127
VALUE.							
Issued in same State ..	£ 1,296,463	£ 834,474	£ 419,404	£ 185,558	£ 212,468	£ 92,280	£ 3,040,647
Issued in other States ..	150,579	129,707	95,659	24,051	10,511	457,355	867,862
Total ..	1,447,042	964,181	515,063	209,609	222,979	549,635	3,908,509

The total number and value of postal notes paid in Australia during the year showed an increase of 6.48 per cent. over the corresponding figures for the financial year 1920-21.

10. **Gross Revenue, Postmaster-General's Department.**—(i) *Total.* The following table shows the gross revenue of the Postmaster-General's Department for the years ended 30th June, 1918 to 1922 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources. The following figures and also those for expenditure are supplied by the Treasury and represent the actual collections and payments for the periods mentioned :—

**GROSS REVENUE OF POSTMASTER-GENERAL'S DEPARTMENT, AUSTRALIA,
1918 TO 1922.**

Year ended 30th June—				Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
				£	£	£	£
1918	..	..	..	2,998,724	1,032,317	1,731,149	5,762,190
1919	..	..	..	3,129,932	1,103,664	1,876,929	6,110,525
1920	..	..	..	3,310,778	1,274,527	2,159,450	6,744,755
1921	..	..	..	4,574,618	(a)1,381,974	2,431,981	8,388,573
1922	..	..	..	5,194,081	(b)1,401,583	2,724,554	9,320,218

(a) Includes £12,052 radio receipts. (b) Includes £25,998 radio receipts.

(ii) *Analysis for States.* The following table gives an analysis of the actual collections of the Postal Department in each State and in Australia during the year ended 30th June, 1922 :—

**ANALYSIS OF GROSS REVENUE OF POSTMASTER-GENERAL'S DEPARTMENT,
1921-22.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
Postage	1,817,771	1,362,344	677,951	393,581	261,916	169,402	4,682,965
Telegraphs (ordinary) ..	486,295	287,425	224,694	206,901	119,562	50,708	1,375,585
Telegraphs (radio) ..	3,899	6,263	8,794	1,853	4,674	515	25,998
Telephones ..	1,080,370	768,860	373,435	267,894	155,168	78,827	2,724,554
Money order commission ..	72,517	40,839	27,615	11,584	14,076	6,231	172,862
Poundage on postal notes ..							
Private boxes and bags ..	15,835	8,519	8,546	4,921	2,885	1,898	42,604
Miscellaneous ..	102,770	84,722	41,545	21,915	33,831	10,867	295,650
Total ..	3,579,457	2,558,972	1,362,580	908,649	592,112	318,448	9,320,218

As compared with the corresponding figures for the previous financial year, a total increase of 11.10 per cent. is shown. The figures for the Postal, Telegraph, and Telephone Branches increased by 13.54, 1.42, and 2.03 per cent. respectively. These increases were mainly due to the operation of the increased rates for the whole year as against nine months only for the year 1920-21.

11. **Expenditure, Postmaster-General's Department.**—(i) *Total.* The subjoined table gives the actual payments made as shown by records kept for Treasury purposes in respect of the Postal Department for each of the years ended 30th June, 1918 to 1922 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, new buildings and additions and interest on transferred properties.

**EXPENDITURE OF POSTMASTER-GENERAL'S DEPARTMENT, AUSTRALIA,
1918 TO 1922.**

Expenditure.	Year ended 30th June—				
	1918.	1919.	1920.	1921	1922.
	£	£	£	£	£
Total	5,677,783	5,826,049	6,649,432	8,268,725	9,976,593

(ii) *Distribution.* The following table shows, as far as possible, the distribution of expenditure on various items in each State during the year ended 30th June, 1922. The table is not to be regarded as a statement of the working expenses of the Department, since items relating to new works, interest, etc., are included therein.

DISTRIBUTION OF EXPENDITURE OF POSTMASTER-GENERAL'S DEPARTMENT, 1921-22.

Particulars.	Central Office.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Salaries and contingencies—								
Salaries	647,849	1,683,811	1,086,733	570,000	378,880	359,690	139,313	4,266,276
Conveyance of mails		444,049	239,094	216,258	82,658	79,723	37,688	1,099,470
Contingencies	639,741	738,569	459,275	363,753	182,644	124,146	85,283	1,993,416
Cables	3,840	..	..	..	..	..	..	3,840
Ocean mails	313,337	..	..	..	..	..	..	313,337
Miscellaneous	3,520	33,971	23,568	6,967	6,002	2,234	3,814	80,076
Pensions and retiring allowances .. ..	..	31,036	42,398	867	..	6,871	..	81,172
Rent, repairs, maintenance	62,788	39,455	23,318	15,969	8,666	8,077	2,775	101,048
Supervision of works .. ..	..	400	292	145	95	63	41	1,036
Proportion of Audit Office expenses .. ..	..	3,450	2,513	1,247	820	543	354	8,927
Unforeseen expenditure .. ..	..	26	20	13	..	3	2	64
New works—								
Telegraph and telephone	65,893	719,841	530,903	166,314	122,746	75,477	27,885	1,649,059
New buildings, etc. .. ..	..	19,391	19,329	11,346	23,973	60,774	4,032	138,845
Interest on transferred properties .. ..	..	81,633	46,490	32,173	..	19,090	7,366	186,752
Other	653,275	..	..	..	..	..	..	653,275
Total	470,243	3,795,632	2,473,933	1,385,057	806,484	736,691	308,553	9,976,593

(a) Particulars of apportionment to each State not available. (b) Includes radio expenditure.

The expenditure for the financial year 1921-22 represented an increase of £1,707,868 or 20.65 per cent. over the corresponding figures for the previous year. New works (£824,422), salaries (£258,334), and a sum of £200,000 paid to the United Kingdom in adjustment of charges for conveyance of overseas mails during the war period contributed the major portion of the increase.

12. *Balance Sheet of the Postmaster-General's Department.*—(i) *General.* The first complete balance sheet and profit and loss account of the Postmaster-General's Department was presented in November, 1913, for the year ending 30th June, 1913. As will be seen from the figures of the General Profit and Loss Account hereunder, the year 1921-22, after providing for depreciation, pensions and retiring allowances, closed with a surplus of £2,244,120. From this amount £703,039, interest on capital, was deducted, leaving a profit of £1,541,081, or £397,313 more than that of 1920-21.

PROFIT AND LOSS ACCOUNT, POSTMASTER-GENERAL'S DEPARTMENT, 1918 TO 1922.

Items.	Year ended 30th June—				
	1918(a).	1919(a).	1920(a).	1921.	1922.
	£	£	£	£	£
Total earnings	5,773,954	6,158,571	6,732,096	8,511,494	9,347,656
Total working expenses	4,809,571	5,043,891	5,633,752	6,724,543	7,103,536
Surplus	964,383	1,114,680	1,098,344	1,786,951	2,244,120
Interest on capital	577,001	590,035	610,390	643,183	703,039
Total surplus	387,382	524,645	487,954	1,143,768	1,541,081

(a) Excluding Wireless Telegraphy Branch, which was transferred to the Department of the Navy as from 1st July, 1915.

In contrast with the results obtained in previous years, a profit of £387,382, the first in the history of the Department, was earned in 1917-18. This satisfactory condition of affairs has been more than maintained in succeeding years, the profit for 1921-22 amounting to £1,541,081.

(ii) *Results for each State.* The next table gives the results for each State during the five years 1917-18 to 1921-22 :—

**PROFIT OR LOSS OF THE POSTMASTER-GENERAL'S DEPARTMENT, STATES,
1918 TO 1922.**

State.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
New South Wales ..	(+) 140,354	(+) 155,159	(+) 95,285	(+) 334,395	(+) 508,474
Victoria ..	(+) 177,805	(+) 254,013	(+) 259,507	(+) 516,860	(+) 644,824
Queensland ..	(+) 68,929	(+) 60,103	(+) 61,311	(+) 143,844	(+) 186,185
South Australia ..	(+) 104,868	(+) 132,772	(+) 151,984	(+) 189,936	(+) 218,528
Western Australia	(-) 102,409	(-) 81,460	(-) 81,391	(-) 62,397	(-) 30,764
Tasmania ..	(-) 2,165	(+) 4,058	(+) 1,258	(+) 21,130	(+) 13,834
Australia ..	(+) 387,382	(+) 524,645	(+) 487,954	(+) 1,143,768	(+) 1,541,081

(+) Denotes profit. (-) Denotes loss.

(iii) *Profit or Loss of Branches.* The following table shows the profit or loss on the various branches during the five years 1917-18 to 1921-22 :—

**PROFIT OR LOSS, BRANCHES, POSTMASTER-GENERAL'S DEPARTMENT,
1918 TO 1922.**

Year ended 30th June—	Postal.		Telegraph.		Telephone.		All Branches.	
	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.	Profit.
	£	£	£	£	£	£	£	£
1918	237,421	..	28,116	..	121,845	..	387,382
1919	239,337	..	63,133	..	222,175	..	524,645
1920	81,217	..	95,636	..	311,101	..	487,954
1921	929,605	8,312	..	..	222,475	..	1,143,768
1922	1,258,286	..	1,809	..	280,986	..	1,541,081

In the period of five years covered by the foregoing table it will be observed that in only one instance (Telegraph Branch in 1921) was there a loss.

§ 2. Telegraphs.

1. **General.**—A review of the development of the Electric Telegraph Services in Australia was given in a previous issue of this work (see Year Book No. 15), but limitations of space preclude the repetition of this information in the present issue.

2. **Telegraph Offices, Length of Lines and Wire.**—(i) *Summary for Australia.* The following table shows the number of telegraph offices and the length of

telegraph lines and of telegraph wire available for use in Australia from 1918 to 1922 inclusive :—

TELEGRAPHS.—AUSTRALIA, SUMMARY, 30th JUNE, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Number of offices	6,196	6,219	6,251	6,366	6,641
Length of wire (miles)—					
Telegraph purposes only	62,981	63,148	63,458	63,295	62,781
Telegraph and telephone purposes ..	74,682	78,004	79,930	82,234	84,855
Length of Line (miles)—					
Conductors in Morse cable	2,218	2,153	2,152	2,133	2,139
Conductors in submarine cable ..	1,708	1,705	1,736	1,851	2,067
Pole routes (miles)	59,849	60,275	60,693	60,563	62,473

(ii) *Particulars for each State.* The following table gives corresponding particulars for each State for the year 1921–22 :—

TELEGRAPHS.—STATES, SUMMARY, 30th JUNE, 1922.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Aus- tralia.
Number of offices ..	2,324	1,791	879	566	582	499	6,641
Length of wire (miles)—							
Telegraph purposes only	21,541	6,183	14,195	11,719	9,007	136	62,781
Telegraph and Telephone purposes	31,326	18,587	15,226	6,363	7,928	5,425	84,855
Length of line (miles)—							
Conductors in Morse cable	722	1,058	324	..	21	14	2,139
Conductors in submarine cable	1,450	440	54	68	5	50	2,067
Pole routes (miles) ..	24,539	8,498	10,935	7,244	8,413	2,844	62,473

It will be noticed that 147,636 miles of wire are available for telegraph purposes, of which 84,855 miles are also used for telephone purposes.

These figures represent an increase of 2,107 and 2,621 miles respectively over the corresponding mileages for the previous year.

3. **Number of Telegrams Despatched.**—(i) *Total for Australia.* The following table shows the number of telegrams despatched to destinations within Australia in each of the years 1918 to 1922 inclusive :—

TELEGRAMS DESPATCHED.—AUSTRALIA, 1918 TO 1922.

Telegrams.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
Number(a)	14,633,859	15,461,034	17,934,998	16,723,111	15,796,022

(a) Including interstate cablegrams.

(ii) *Totals for each State.* The following table shows the number of telegrams despatched in each State in 1921–22 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams for places outside Australia—despatched in each State :—

TELEGRAMS DESPATCHED.—STATES, 1921–22.

State, etc.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
Inland ..	4,187,795	2,593,954	2,021,593	1,036,922	1,320,248	352,827	11,513,339
Interstate (a) ..	1,324,654	1,177,108	681,259	502,786	368,131	228,745	4,282,683
Total ..	5,512,449	3,771,062	2,702,852	1,539,708	1,688,379	581,572	15,796,022

(a) Including interstate cablegrams.

The figures in the foregoing table show an all round decrease in the volume of telegraph business as compared with the corresponding figures for the previous financial year.

4. **Rates for Transmission of Telegrams.**—The original rates for the transmission of telegrams within Australia were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act “ordinary” and “press” telegrams are charged different rates. “Press” telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorized correspondent, and must be addressed to a registered newspaper or recognized news agency. The subjoined table shows the scales of charges imposed by an amending Act which came into operation on 1st October, 1920. The first table refers to ordinary telegrams.

TRANSMISSION CHARGES.—ORDINARY TELEGRAMS.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Including address and signature—			
Not exceeding 16 words	0 9	1 0	1 4
Each additional word	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday,* Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams lodged for “urgent” transmission.

The charges for press telegrams are given hereunder :—

TRANSMISSION CHARGES.—PRESS TELEGRAMS.

Particulars.	Within any State.	Interstate.	Relating to Parlia- mentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.(a)
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Not exceeding 25 words	0 8	1 4	1 4
From 26 to 50 words	0 11	1 10	1 8
From 51 to 100 words	1 9	3 6	2 0
Every additional 50 words	0 8	1 4	0 8

(a) Within Australia.

5. **Letter-telegrams.**—Letter-telegrams which are limited to messages of a social, domestic or private nature may be exchanged between any of the following offices: (a) offices which are open for the receipt of ordinary business between 7 p.m. and midnight; (b) offices which are open for ordinary or press business after 7 p.m. The rates charged throughout Australia are one shilling and threepence for the first 30 words, and one halfpenny for each additional word, double these rates being charged on Sundays. On the 1st April, 1923, the service applied to 101 offices.

6. **Wireless Telegraphy and Telephony.**—(i) *General.* In Year Book No. 15 a résumé was given of the activities in connexion with Wireless Telegraphy and Telephony in Australia. Since the publication of that issue, the Radio Service, which had hitherto been administered under the Wireless Telegraphy Act 1905, by the Postmaster-General's Department—with the exception of the period September, 1915, to June, 1920—during which it was controlled by the Navy Department—was placed under the Prime Minister's Department as the Wireless Branch from 1st December, 1922, on which date the Wireless Telegraphy Regulations 1922 became operative.

On 1st March, 1923, the Wireless Branch was re-transferred to the control of the Postmaster-General's Department.

The Radio Stations handed over to the control of the Amalgamated Wireless (Australia) Ltd. in accordance with the agreement of 28th March, 1922 (see Year Book No. 15, 1922, pp. 628–9), are situated in Sydney, Melbourne, Brisbane, Cooktown, Rockhampton, Thursday Island, Townsville, Adelaide, Broome, Esperance, Geraldton, Perth, Wyndham, Flinders Island, Hobart, King Island, Darwin, Misima, Port Moresby, and Samarai, all formerly under the control of the Postmaster-General's Department, and Aitape, Kavieng, Kieta, Madang, Manus, Morobe, and Rabaul, previously under the control of the Administrator of the Territory of New Guinea.

Radio-telegraphic stations have been erected at Suva, Ocean Island, Tulagi, and Vila under the control of the High Commissioner of the Pacific, while the New Zealand Government has erected high-power stations at Awanui (Auckland), Awarua (Bluff), and Apia (Samoa), and low-power stations at Auckland, Chatham Islands, Raratonga (Cook Islands), and Wellington.

The following rates are applicable to radio-telegrams transmitted either way:—Between any telegraph office in Australia and Australian ships, 6d. per word, allocated as follows: Coast station 3d., ship station 2d., landline 1d. British and foreign ships, 11d. per word, allocated: Coast station 6d., ship station 4d., landline 1d. Between the Commonwealth and Port Moresby the rate is 6d. per word, and between the mainland and Flinders Island or King Island 2s. 8d. for sixteen words, 2d. each additional word.

(ii) *Licence Fees.* The Regulations provide for the issue of the following licences, for which the respective fees per annum, payable in advance, are as shown, viz.:—(a) Coast Station, £1; (b) Ship Station, £1; (c) Land Station, £1; (d) Broadcasting Station, £5; (e) Experimental Station (i) Transmitting and Receiving, £1, (ii) Receiving only, 10s.; (f) Portable Station, £1; (g) Aircraft Station, £1. Licences remain valid for a period of twelve months from date of issue, but may be renewed from time to time.

(iii) *Licences Issued.* The following table shows the number of each class of licence in force at 31st December, 1922:—

WIRELESS LICENCES, 31st DECEMBER, 1922.

Station Licence.					Total.
Coast	..	..	..	..	28
Ship	..	..	..	..	128
Land	..	..	..	..	..
Broadcasting	..	..	..	..	..
Experimental—					
Transmitting and Receiving	..	..	..	..	724
Receiving only	..	..	..	..	32
Portable	..	..	..	..	..
Aircraft	..	..	..	..	..
Total	..	..	..	..	912

Licences previously issued by the Minister for the Navy under the Naval Defence Act 1910–1918, or by the Postmaster-General under the Act, and which were in force on 1st December, 1922, are not prejudiced by these Regulations.

(iv) *Unauthorized Stations.* In order that an adequate check may be kept on unauthorized stations, dealers in wireless apparatus or accessories are compelled to keep a register and record therein all sales of wireless telegraphy or telephony apparatus; such register must be made available for inspection at any time. It is provided in the Regulations that no person or firm shall sell or supply apparatus or accessories to any person unless that person is the holder of, or is about to obtain, a licence.

(v) *Proficiency Certificates.* Proficiency certificates for wireless operators and watchers are issued by the Minister to individuals who pass the specified tests. Fees of 10s. and 5s. respectively are imposed on candidates for either class of certificate on each occasion when they sit for examinations.

Every ship station and coast station, in respect of which a licence is issued, must be operated by a person holding a certificate of proficiency.

At 31st December, 1922, 730 first-class and 29 second-class proficiency certificates and 21 watchers' certificates had been issued.

7. Revenue and Expenditure.—Particulars as to the revenue from the telegraph systems for the years 1917–18 to 1921–22 are given in another portion of this section.

§ 3. Submarine Cables.

1. First Cable Communication with the Old World.—In earlier issues of the Year Book will be found a detailed account of the connexion of Australia with the old world by means of submarine cables. (See No. 6, p. 770.)

2. The Tasmanian-Victoria Cables.—On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria, the contract price being £52,447. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore-end cable, making a total of 390 nautical miles.

3. The Eastern Extension Company's Cables.—In addition to the first Victoria-Tasmania cable and the original cable from Darwin (see Year Book No. 6, p. 770), the Eastern Extension Company has constructed several other cables connecting with various places in Australia, viz., Darwin to Banjoewangie (two lines); Fremantle to Durban; Fremantle to Adelaide; Java to Cocos Island, which provides another route between Australia and South Africa; and a cable partly owned by this Company connecting the Darwin-Singapore cable with London *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Latvia), and Newbiggin (London).

4. The Pacific Cable.—(i) *Cable Lines.* The Pacific Cable lines are controlled by the Pacific Cable Board, consisting of three representatives of the Imperial Government and one each from Canada, Australia, and New Zealand. The main cable route known as the "All Red" runs from Southport in Queensland to Bamfield in British Columbia, thence overland to Montreal. Traffic is then transmitted across the Atlantic over the cables of the Anglo-American and Commercial Companies, or, if so desired, the Marconi Wireless System between Canada and the United Kingdom may be availed of for either homeward or outward messages at a reduction of twopence on the through cable rate of three shillings per word. Cable stations are established at Norfolk Island, Fiji, and Fanning Island. A branch cable approximately 600 miles long runs from Norfolk Island to Doubtless Bay, North Island of New Zealand.

The report of the Pacific Cable Board for 1920-21 states that while the cable has been singularly free from interruption it is recognized that the margin of safety must decrease as time goes on. Moreover, the capacity of the single line is inadequate when special circumstances cause a rush of heavy traffic. For these reasons the Board has had under consideration for some time the question of duplicating the cable, and, as a result, definite proposals to this end were submitted to the Governments concerned in April, 1920. These proposals have been temporarily deferred pending further information regarding a new, but, as yet, untried type of cable. During the year 1921-22 three interruptions, due to corrosion, occurred to the Board's cable. Two of these were in the vicinity of Norfolk Island, and the other at Fanning Island. The interruptions in the neighbourhood of Norfolk Island are causing concern, but fortunately the breaks were in the New Zealand cable and did not result in such a serious dislocation of traffic as would be the case should a break occur in the Suva cable. The local conditions in the vicinity of Norfolk Island are singularly unfavourable to the life of cables owing to the waters being shallow and rocky for a considerable distance from land, and, in addition, the surf beats heavily, causing damage by chafing. In addition, the marine growth to which the cause of corrosion is ascribed, is very prolific.

(ii) *Financial Summary.* The receipts for the year exceeded the ordinary expenses by £210,257, from which a special contribution of £100,000 has been made to the Reserve and Renewal Fund together with £2,800 earned by the cable steamer "Iris." These payments are in addition to the normal annual payment of £30,000. After payment of the above special contributions and also of the annuity of £77,545 in respect of interest and repayment of the capital of £2,000,000, and of the annuity of £9,150 to the Renewal Fund for interest and Sinking Fund on £177,254 borrowed from the fund for the purposes of the Auckland-Sydney cable, there remains a surplus of £20,762, of which the Commonwealth Government's share was £6,921. In accordance with the Pacific Cable Act 1901 the surplus was applied in the reduction of the balance of the original loan of £2,000,000. The following table shows particulars of the revenue, expenditure, total profit, and the proportion thereof payable to the Commonwealth for the years ended 31st March, 1918 to 1922.

PACIFIC CABLE—FINANCIAL SUMMARY, 1918 TO 1922.

Year ended the 31st March—	Revenue.	Expenditure (including Annuities and Renewal Fund).	Profit.	Commonwealth Proportion of Profit.
	£	£	£	£
1918 ..	411,061	385,668	25,393	8,464
1919 ..	564,097	554,516	9,581	3,193
1920 ..	664,986	654,552	10,434	3,478
1921 ..	633,343	629,866	3,477	1,159
1922 ..	528,428	507,666	20,762	6,921

5. *New Zealand Cables.*—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1,191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidized by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. During 1911 a scheme for providing a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the laying of the new cable was completed on the 24th December, 1912, the cable being opened for traffic on the 31st December, 1912.

6. *The New Caledonia Cable.*—In April, 1892, a French Company, known as the Compagnie Francaise des Cables Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8,000, and by the Governments of New South Wales and

Queensland to the amount of £2,000 each annually for a period of 30 years. The cable was opened for use in October, 1893, the Australian shore-end being at Burnett Heads, near Bundaberg. The guarantees of the Governments of New South Wales and Queensland have since been transferred to the Commonwealth Government.

7. Lengths of Cable Routes.—The following table gives the lengths of various cable routes :—

LENGTHS OF CABLE ROUTES.

Via Darwin.				Via South Africa.			

9. **Cable Rates.**—(i) *Ordinary Cablegrams.* The rates per word for ordinary cablegrams to some of the most important countries as at the 27th March, 1923, are shown in the appended tabular statement:—

CABLE RATES, 1923.

Country.	Route and Rate per Word.	
	Via Pacific.	Via Eastern.
Europe—		
Great Britain (a), Belgium, France, Germany, Holland, Jugo-Slavia, Switzerland	3/-	3/-
Other European countries	3/6 to 4/6	3/- to 3/6
Asia—		
China	6/11 to 7/1½	2/6 to 2/11
India .. .. .	..	2/6
Japan	7/4½	3/5
Netherlands East Indies	6/10	2/6
Philippine Islands .. .. .	..	2/6 to 3/3
Straits Settlements .. .. .	..	2/6
Other Asiatic Countries	4/4 to 7/4½	2/6 to 5/11
Africa—		
Egypt .. .. .	..	3/5 and 3/6
Mauritius .. .. .	..	2/5
Portuguese East Africa .. .. .	..	2/5 to 2/7
South African Union .. .. .	..	2/2 and 2/3
Sierra Leone .. .. .	..	4/8 to 4/11
Other African countries .. .. .	..	2/5 to 11/3
North America—		
Alaska	3/7	5/7
Canada	2/4 to 3/6	..
Newfoundland	2/7½	..
United States	2/4 to 2/8	4/- to 4/6
Central America	2/8 to 4/10½	4/6 to 6/6
West Indies	3/- to 8/1½	4/8 to 10/2
South America—		
Argentine	4/9	4/9
Brazil	4/7 to 7/5	5/- to 8/7
Other	1/7 to 8/1½	4/9 to 9/9
New Zealand and Pacific Islands—		
Fanning Island	2/-	..
Fiji	8d. to 11d.	8d. to 11d.
New Zealand	4½d.	4½d.
New Caledonia	9d. (b)	..
Norfolk Island	3d.	..
Ocean Island (via Suvaradio)	1/8	1/8
Sandwich Islands	3/4½ to 4/5	5/1 to 5/8
Other	1/4½ to 5/10½	3/6 to 5/1

(a) Pacific-Marconi 2s. 10d. per word.

(b) via Queensland.

(ii) *Deferred Cablegrams.* Under this system a reduction of 50 per cent. in the ordinary cable charges is made, provided the message is written in plain language, and conveys no other meaning than that which appears on the face of it. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have

not reached their destination within a period of 24 hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent via the Pacific or Eastern routes to nearly all countries to which the ordinary rate exceeds tenpence per word. This service, together with that of the week-end cable letters, has affected the ordinary cable business to a large extent. Deferred press cablegrams subject to a delay of eighteen hours may be exchanged between Australia and the United Kingdom at the rate of fourpence halfpenny per word, and between Australia and Vancouver at the rate of twopence halfpenny per word. The deferred cable service was frequently suspended during the war owing to the pressure of other cable business, and the service has not yet returned to normal conditions.

(iii) *Week-end Cable Letters.* Week-end cable letters may be exchanged between Australia and the United Kingdom, British North America, and Fanning Island at the rates indicated hereunder. Under this arrangement, messages written in plain language may be lodged at any post office in Australia or the United Kingdom in time to reach the forwarding cable office by post or telegraph by midnight on Saturday. The messages, which are deliverable by post on Tuesday morning, are charged at the rate of ninepence per word, plus ordinary telegraph rate, if required to be forwarded by land telegraph in either the country of despatch or destination.

The rates to the countries named, including the United Kingdom, are as follows :—

RATES FOR WEEK-END CABLE LETTERS.

Country.						Rate per Word.	Minimum Charge per Telegram. (20 Words.)
United Kingdom .. .. .	..	..	..	..	..	9d.	15/-
Canada (ordinary rate 2s. 4d.)	..	..	..	..	..	7d.	11/8
Other parts of Canada	..	..	..	..	..	8d. to 10d.	12/11 to 16/8
Newfoundland .. .. .	..	..	..	..	..	8½d.	13/9
Fanning Island .. .. .	..	..	..	..	..	6d.	10/-

(iv) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence halfpenny a word, but it has since been reduced to fourpence halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. *Cable Subsidies Paid.*—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. From the year 1895 onwards the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—were met by the receipts.

The following table shows the total amounts paid by way of cable subsidies for the years 1918 to 1922 :—

CABLE SUBSIDIES, 1918 TO 1922.

Subsidies.		Year ended 30th June—				
		1918.	1919.	1920.	1921.	1922.
Amount ..	£	3,851	3,756	3,797	3,749	3,840

As the agreement in connexion with the Tasmanian cable expired in 1909, and as new cables were laid by the Commonwealth Government, the guarantees were, in the course of the year 1910, reduced to those in connexion with the New Caledonia and Pacific cables. From 1915–16 the only cable subsidy paid by the Commonwealth was in respect of the New Caledonian cable guarantee.

§ 4. Telephones.

1. **Telephone Services.**—(i) *Mileage, etc., Australia.* The following table shows the mileage of lines, etc., for telephone purposes, giving trunk lines separately, on 30th June, 1921 and 1922 :—

TELEPHONE LINES—AUSTRALIA, 30th JUNE, 1921 AND 1922.

Particulars.	1921.	1922.
Ordinary Lines—		
Conduits duct miles	2,697	2,926
Conductors in aerial cables loop mileage	37,923	35,627
Conductors in underground cables "	226,886	260,349
Conductors in cables for junction circuits "	33,759	43,193
Open conductors single wire mileage	195,264	205,354
Trunk Lines—		
Telephone trunk lines only miles	27,781	33,175
Telegraph and telephone purposes "	82,234	84,855

(ii) *Summary for States.* Particulars relating to the telephone service in each State for the years ended 30th June, 1920, to 1922 will be found in the following table :—

TELEPHONE SERVICES.—SUMMARY, 1920 TO 1922.

Particulars.	Year (30th June.)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
No. of Exchanges ..	1920	873	697	378	206	115	140	2,409
	1921	921	750	398	218	122	144	2,553
	1922	960	814	421	221	133	154	2,703
No. of lines connected ..	1920	70,700	49,017	22,803	14,319	9,905	5,362	172,106
	1921	74,490	52,791	23,855	15,984	10,438	5,805	183,363
	1922	80,042	55,986	25,575	17,402	10,624	6,257	195,886
No. of instruments connected	1920	91,117	66,211	28,161	19,273	12,671	6,567	224,000
	1921	96,710	72,088	29,637	21,480	13,412	7,180	240,507
	1922	104,108	77,744	31,878	23,248	13,748	7,751	258,477
No. of subscriber's instru- ments	1920	88,015	64,479	26,953	18,545	12,081	6,232	216,305
	1921	93,467	70,319	28,392	20,705	12,827	6,854	232,564
	1922	100,747	75,914	30,561	22,421	13,151	7,418	250,212
No. of public telephones ..	1920	1,606	1,376	800	440	343	234	4,799
	1921	1,693	1,410	835	473	355	206	4,972
	1922	1,787	1,469	888	523	368	213	5,248
No. of other local instru- ments	1920	1,496	356	408	288	247	101	2,896
	1921	1,550	359	410	302	230	120	2,971
	1922	1,574	361	429	304	229	120	3,017
Instruments per 100 of population	1920	4.7	4.4	3.9	4.1	3.8	3.0	4.3
	1921	4.60	4.69	3.85	4.28	4.03	3.39	4.41
	1922	4.84	4.95	4.06	4.57	4.05	3.63	4.64
Earnings		£	£	£	£	£	£	£
	1920	868,049	599,960	306,860	202,829	125,630	64,741	2,168,069
	1921	964,981	695,409	339,116	235,269	142,906	73,300	2,450,981
	1922	1,086,908	777,388	375,541	271,881	154,799	79,548	2,746,065
Working expenses ..	1920	635,600	375,034	190,900	119,477	101,892	46,251	1,469,154
	1921	788,671	443,522	243,135	150,960	122,896	59,438	1,808,622
	1922	856,255	479,304	281,414	170,360	133,048	71,150	1,991,531
Percentage of working ex- penses on earnings	1920	% 73.22	% 62.51	% 62.21	% 58.91	% 81.10	% 71.44	% 67.76
	1921	81.73	63.78	71.70	64.16	86.00	81.09	73.79
	1922	78.78	61.66	74.93	62.66	85.95	89.44	72.52

In Australia there were 195,886 telephone lines connected to 2,703 exchanges at 30th June, 1922, an increase of 12,523 and 150 respectively over the corresponding figures for the preceding year.

(iii) *Subscribers' Lines and Calling Rates.* The subjoined table gives the number of subscribers' lines and the daily calling rate at central, suburban, and country telephone exchanges in the several States for the year 1921-22 :—

TELEPHONES.—SUBSCRIBERS' LINES AND DAILY CALLING RATE, 1921-1922.

State.	Central Exchanges.		Suburban Exchanges.		Country Exchanges.		Total.	
	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.	Subscribers' Lines.	Average Outward Calls Daily per line.
New South Wales	10,464	7.70	36,218	3.00	30,459	1.50	77,141	3.05
Victoria ..	11,778	8.14	23,984	3.56	18,820	1.52	54,582	3.84
Queensland ..	6,775	7.72	3,596	3.20	14,850	2.66	25,221	4.10
South Australia	6,662	7.00	5,441	4.20	4,665	1.36	16,768	4.52
Western Australia	3,863	6.57	2,431	4.40	3,996	2.07	10,290	4.31
Tasmania ..	2,256	4.27	286	2.40	3,651	1.67	6,193	2.65
Australia ..	41,798	7.43	71,956	3.33	76,441	1.76	190,195	3.60

A comparison of the daily calling rates for each class of exchange shows Victoria to have registered the greatest number per line at central exchanges, Western Australia at suburban exchanges, and Queensland at country exchanges. Taking the figures for Australia, it will be observed that the average number of calls per line at central exchanges was more than double the number registered at suburban exchanges, while the average for suburban exchanges was slightly less than double the number shown for country exchanges.

(iv) *Trunk Line Calls and Revenue.* In the following table the number of telephone trunk line calls recorded, the amount of revenue received, and the average revenue per call are shown for each of the States for the years 1919-20 to 1921-22 :—

TELEPHONES.—TRUNK LINE CALLS AND REVENUE FOR THE YEARS 1919-20 TO 1921-22.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
Total Calls for Year—	No.	No.	No.	No.	No.	No.	No.
1919-20 ..	4,898,098	3,200,528	2,050,209	1,092,516	489,905	688,949	12,420,205
1920-21 ..	5,042,929	3,363,971	2,130,234	1,148,882	525,642	699,298	12,910,956
1921-22 ..	5,267,870	3,699,176	2,307,804	1,350,946	582,340	760,033	13,968,169
Total Revenue for Year—	£	£	£	£	£	£	£
1919-20 ..	172,200	116,262	97,983	49,444	22,724	23,241	481,854
1920-21 ..	178,704	124,721	102,748	52,162	24,938	23,508	506,781
1921-22 ..	197,295	138,643	112,396	64,973	26,911	24,921	565,139
Average Revenue per Call—	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
1919-20 ..	8.44	8.72	11.47	10.86	11.13	8.10	9.31
1920-21 ..	8.50	8.89	11.57	10.89	11.38	8.07	9.42
1921-22 ..	8.98	8.99	11.69	11.54	11.09	7.87	9.71

2. Telephone Rates.—On the 10th December, 1915, revised charges for telephone services came into operation. Under the new scale, ground-rent for telephones is calculated on the number of subscribers connected with the exchange or network, instead of being based on the total population residing within the telephone network, as formerly. The smallest and greatest rental charges remain the same as under the old system, but between these a more gradual scale was introduced. Previously the charge for calls made by a subscriber was at the rate of two calls for one penny up to 2,000 calls per half-year; above that number, three calls for one penny. This charge was increased to one penny per call, without any progressive reduction. At the same time, the public

telephone charge per call was increased from one penny to twopence. On the 1st October, 1920, telephone charges were again increased, and the rates in the following table are now in force :—

TELEPHONES, AUSTRALIA.—RENTAL CHARGES, 1st APRIL, 1923.

Exchanges or Networks with Subscribers' Lines Connected, as shown hereunder.	Radius of Network with Main Exchange as Centre.	Annual Ground Rent, within Two-mile Radius.		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Service.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 300	5	3 0 0	2 10 0	2 0 0
„ 301 to 600	5	3 5 0	2 10 0	2 0 0
„ 601 to 1,500	5	4 7 6	3 7 6	2 15 0
„ 1,501 to 4,000	10	4 12 6	3 15 0	3 2 6
4,001 and upwards	10	5 0 0	3 15 0	3 2 6

It is provided that for each effective call originating from a subscriber's instrument the charge shall be one penny in respect of exchanges or networks with 600 subscribers or less, and one penny farthing in respect of exchanges or networks with more than 600 subscribers.

3. Revenue from Telephones.—Particulars regarding the revenue from telephone services are included in the paragraph dealing with the revenue of the Postmaster-General's Department.

[NOTE.—In connexion with the postal rates quoted on page 345 hereinbefore it may be noted that, at the time of going to press with this Chapter, the Commonwealth Parliament is considering amendments thereof. Information regarding the new rates will be found in the Appendix.]

CHAPTER VIII.

FINANCE.

A. COMMONWEALTH FINANCE.

§ 1. General.

1. Financial Provisions of the Constitution.—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

Section 69 provides for certain specified departments to be transferred to the Commonwealth from the States, while section 51, in outlining the powers of the Federal Parliament, implies the transfer or creation of various other departments. Section 87 deals with the financial relations between the Commonwealth and the States. All of these matters have been treated in some detail in previous issues of the Official Year Book up to and including No. 12, and further reference to them will not be made here.

The Commonwealth Treasury issues annually a document entitled "The Treasurer's Statement of Receipts and Expenditure during the year ended 30th June"; with which is incorporated the report of the Commonwealth Auditor-General for the year. This series of annual statements is the authority for the majority of the tables given herein.

2. Accounts of Commonwealth Government.—The Commonwealth Government, like the States Governments, bases its accounts mainly upon three funds, the Consolidated Revenue Fund, the Trust Fund, and the Loan Fund. The last mentioned came into existence in the financial year 1911-12, but on the outbreak of war it became so important that it is now treated in two parts—a General Loan Fund mainly for purposes of Public Works, and a War Loan Fund for purely military purposes. The accounts of these funds are now so interwoven that a proper conspectus of the Commonwealth Accounts can hardly be obtained by an analysis of each of them singly. Two tables are therefore appended, showing receipts and disbursements from all sources for the last five years. The different funds will then be treated in detail in the subsequent paragraphs.

COMMONWEALTH RECEIPTS, 1917-18 TO 1921-22.

Heading:	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Consolidated Revenue	36,839,868	44,716,918	52,783,102	65,517,608	64,897,046
Trust Funds in aid of Revenue ..	2,077,427	3,925,820	3,523,057	5,724,806	6,618,327
Total	38,917,295	48,642,738	56,306,159	71,242,414	71,515,373
General Loan Fund	1,803,447	1,429,891	1,286,786	4,101,726	12,253,610
Total	1,803,447	1,429,891	1,286,786	4,101,726	12,253,610
War Loan Fund	60,865,195	57,637,507	27,125,203	33,064,475	20,657,932
Unexpended Balance from previous years	17,730,688	23,500,774	18,945,392	..	..
Total	78,595,883	81,138,281	46,070,595	33,064,475	20,657,932
Grand Total	119,316,625	131,210,910	103,663,540	108,408,615	104,426,915

COMMONWEALTH EXPENDITURE, 1917-18 TO 1921-22.

Heading.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Expenditure from Consolidated Revenue ..	26,573,674	34,786,107	40,337,804	52,059,118	51,453,087
Balance paid into Trust Funds ..	3,925,820	3,476,478	5,724,806	6,618,327	6,408,424
Expenditure from Trust Funds ..	2,077,427	3,879,241	3,523,057	5,724,806	6,618,327
Unexpended Balance from Trust Funds ..		46,579			
Subsidy to States ..	6,340,374	6,454,333	6,720,492	6,840,163	7,035,535
Total ..	38,917,295	48,642,738	56,306,159	71,242,414	71,515,373
General Loan Fund Expenditure	1,803,447	1,429,891	1,286,786	4,101,726	12,253,610
Total ..	1,803,447	1,429,891	1,286,786	4,101,726	12,253,610
War Expenditure from War Loan Fund ..	55,095,109	62,192,889	46,070,595	26,859,445	11,768,749
Unexpended Balance from War Loan Fund ..	23,500,774	18,945,392	..	6,205,030	8,889,183
Total ..	78,595,883	81,138,281	46,070,595	33,064,475	20,657,932
Grand Total ..	119,316,625	131,210,910	103,663,540	108,408,615	104,426,915

§ 2. Consolidated Revenue Fund.

Division I.—Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present certain moneys received by the Commonwealth, which are not of the nature of revenue, are paid to Trust Account, and other moneys are paid to Loan Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or annual, and provided for in an annual Appropriation Act.

Division II.—Revenue.

1. **Total.**—The consolidated revenue of the Commonwealth, which in 1901-2, the first complete financial year under the new régime, amounted to £11,296,985, had, in 1921-22, reached a total of £64,897,046, an increase in the period of £53,600,061.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1917, to 30th June, 1922, are contained in the following table :—

COMMONWEALTH CONSOLIDATED REVENUE, 1917-18 TO 1921-22.

Revenue.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Total ..	36,839,868	44,716,918	52,783,102	65,517,608	64,897,046

The great increase in recent years is due to the large expansion in taxation, which will be dealt with in detail in a later subsection.

2. Revenue per Head.—The table hereunder gives particulars of the amount of revenue from various sources per head of population for the last five years :—

COMMONWEALTH CONSOLIDATED REVENUE PER HEAD, 1917-18 TO 1921-22.

Source of Revenue.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation	4 18 9	6 9 4	7 17 9	9 13 9	9 0 4
Public Works and Services ..	1 18 1	1 16 0	1 8 7	1 13 4	1 14 8
Other Receipts	0 11 1	0 10 8	0 12 7	0 15 1	1 0 7
Total	7 7 11	8 16 0	9 18 11	12 2 2	11 15 7

3. Sources of Revenue.—(i) *General.* The following table furnishes details of the revenue from each source during the years 1917-18 to 1921-22 :—

COMMONWEALTH CONSOLIDATED REVENUE—SOURCES, 1917-18 TO 1921-22.

Source.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Taxation—					
Customs	9,486,555	11,605,410	13,705,220	21,731,210	17,328,310
Excise	3,737,757	5,821,560	7,869,339	10,078,696	10,302,049
Land Tax	2,123,779	2,109,171	2,110,306	2,155,699	2,284,040
Estate Duty	947,232	923,908	1,441,819	1,179,513	991,378
Income Tax	7,385,514	10,376,456	12,848,123	14,351,408	16,790,682
Entertainments Tax ..	245,898	358,126	557,911	649,828	675,675
War Time Profits Tax ..	680,008	1,206,538	2,569,012	2,083,139	1,306,708
War Postage .. ..	..	463,317	745,962	197,928	..
Total	24,606,743	32,864,486	41,847,692	52,427,421	49,678,842
Public Works and Services—					
Postal	5,762,190	6,110,522	6,744,755	8,388,569	9,320,654
Railways	201,107	196,988	265,918	235,387	217,301
Commonwealth Steamers ..	880,000	1,015,762	..	137,959	..
Detained Enemy Vessels ..	2,173,418	1,671,905	344,411	131,763	..
Other	468,769	156,321	218,209	141,418	4,094
Total	9,485,484	9,151,498	7,573,293	9,035,096	9,542,049
Other Revenue—					
Interest, Discount, etc. ..	995,576	1,479,426	1,589,347	1,996,012	2,361,137
Coinage	229,378	125,634	76,439	106,373	178,439
Defence	683,804	262,786	183,227	185,649	150,297
Quarantine	16,453	44,118	62,053	42,972	42,639
Territories, (a)	71,053	97,873	65,206	79,575	77,844
Patents, etc.	20,282	23,623	34,067	40,639	41,393
Lighthouses	108,556	125,231	153,992	180,105	171,967
Pension Contributions ..	51,396	51,763	57,642	54,632	57,489
Defence Trust Account ..	250,310	185,082	270,504	116,329	203,085
Unexpended Balances of London Orders	186,149	185,746	708,264	696,095	..
Net Profit on Australian Note Issue ..	..	..	..	394,016	1,261,482
Miscellaneous	134,684	119,652	161,376	162,694	1,130,383
Total	2,747,641	2,700,934	3,362,117	4,055,091	5,676,155
Grand Total	36,839,868	44,716,918	52,783,102	65,517,608	64,897,046

(a) Exclusive of Railways, and other items which appear elsewhere under their appropriate headings.

In addition to the new direct taxation, there has been for some time a fairly steady return from Customs and Excise. The postal receipts have shown a consistent upward tendency, and there has been also a large addition to the revenue in recent years by the operations of the Commonwealth steamers, detained enemy vessels, and other activities. The large amount for 1921-22, under the head of "Miscellaneous," includes £835,000, payment on account of the Army of Occupation.

(ii) *Taxation.*—(a) *Customs Revenue.* Particulars for the five years 1917-18 to 1921-22 are furnished in the following table:—

COMMONWEALTH CUSTOMS REVENUE, 1917-18 TO 1921-22.

Classes.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Stimulants	1,693,957	1,455,667	1,880,531	1,773,103	1,981,882
Narcotics	1,236,085	1,268,357	1,590,450	1,533,860	1,619,916
Sugar	51,119	107,965	(a) 7,229	3,193	9,991
Agricultural products	603,605	515,236	726,360	819,842	951,816
Apparel and textiles ..	2,393,518	3,422,371	3,444,292	6,195,545	4,514,541
Metals and machinery	1,000,943	1,603,767	2,165,221	4,728,937	3,324,601
Oils, paints, etc. ..	267,129	319,043	311,022	542,619	409,768
Earthenware, etc. ..	176,244	248,664	280,064	643,731	503,941
Drugs and chemicals ..	163,623	219,532	289,437	420,327	395,777
Wood, wicker and cane	203,430	214,715	274,500	540,638	552,842
Jewellery, etc. ..	279,785	334,986	413,134	704,749	525,207
Leather, etc. ..	346,073	466,589	576,106	690,455	482,389
Paper and stationery ..	299,330	506,662	467,623	1,091,173	633,261
Vehicles	322,344	337,334	625,498	1,033,006	718,080
Musical instruments ..	110,413	110,850	142,082	239,822	170,859
Miscellaneous articles	298,661	425,349	477,612	718,752	480,461
Other receipts ..	40,296	48,323	48,517	51,458	52,978
Total Customs ..	9,486,555	11,605,410	13,705,220	21,731,210	17,328,310

(a) Debit.

The receipts from this source in 1920-21 were abnormally high owing to the fulfilment of large numbers of contracts from abroad before the anticipated time.

(b) *Excise Revenue.* Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1918, to 1922, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Beer	1,703,888	2,862,760	3,702,442	5,439,339	5,473,220
Spirits	804,476	1,098,440	1,609,065	1,558,766	1,510,432
Tobacco	1,223,792	1,847,661	2,545,214	3,055,308	3,288,852
Licences	5,601	12,699	4,681	12,569	12,716
Starch .. ..	..	..	..	12,714	16,829
Total Excise ..	3,737,757	5,821,560	7,869,339(a)	10,078,696	10,302,049

(a) Including £7,937 "Other."

Comparing the Excise collections for 1921-22 with those for 1917-18, it will be seen that the revenue from beer more than trebled in the period under review, while that from tobacco has nearly trebled. The large increase in every item in the last four years is due to the operation of increased excise duties which came into force on 25th September, 1918.

(c) *Land Tax.* Details in regard to rates of tax, etc., will be found in Official Year Book No. 14 at the end of Section XX.

A table is appended showing the actual amounts received by the Treasury for five years. The yield of the tax has been remarkably constant for many years.

COMMONWEALTH LAND TAX COLLECTIONS, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	889,164	822,880	955,935	933,649	1,015,851
Victoria	844,872	885,084	818,769	865,001	910,764
Queensland	149,989	141,121	112,064	85,978	95,763
South Australia	145,852	153,789	118,318	166,260	174,983
Western Australia	58,743	64,378	60,613	63,349	45,820
Tasmania	35,159	41,918	44,607	41,462	40,859
Total	2,123,779	2,109,170	2,110,306	2,155,699	2,284,040

(d) *Estate Duty.* Collections from this source for the five years, 1917 to 1922, are given hereunder :—

COMMONWEALTH ESTATE DUTY COLLECTIONS, 1917-18 TO 1921-22.

Year.	N.S.W.	Vic. (b)	Q'land.	S. Aust.(a)	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1917-18 ..	338,006	448,225	55,181	69,737	18,616	17,467	947,232
1918-19 ..	307,499	377,872	56,909	131,488	28,638	21,502	923,908
1919-20 ..	399,896	700,629	60,670	144,077	99,826	36,720	1,441,818
1920-21 ..	385,070	432,281	98,054	171,450	76,516	16,142	1,179,513
1921-22 ..	363,731	372,126	97,785	82,698	39,865	35,173	991,378

(a) Including Northern Territory.

(b) Including Central Office.

(e) *Income Tax.* The first Commonwealth Income Tax was levied during the financial year 1915-16. The legislation on the subject comprises the Income Tax Assessment Act No. 34 of 1915, as amended by the Income Tax Assessment Acts Nos. 47 of 1915, 37 of 1916, 39 of 1916, 18 of 1918, and 31 and 32 of 1921. Full details as to the original Acts are to be found in Commonwealth Official Year Book No. 9. The result of the last five years' collections was as follows :—

COMMONWEALTH INCOME TAX COLLECTIONS, 1917-18 TO 1921-22.

States.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales ..	2,543,427	3,674,633	4,291,947	4,920,154	5,273,221
Victoria (a) ..	2,847,448	3,966,829	5,325,003	5,867,958	7,312,618
Queensland ..	795,717	1,206,051	1,446,503	1,269,242	1,547,138
South Australia ..	612,225	803,950	906,837	1,382,029	1,494,210
Western Australia ..	433,703	487,842	558,026	557,277	692,339
Tasmania ..	149,947	234,066	318,051	350,382	463,421
Northern Territory ..	3,047	3,085	1,757	4,366	7,735
Total ..	7,385,514	10,376,456	12,848,124	14,351,408	16,790,682

(a) Including Central Office.

The steady rise during the period has been due in part to increases in the rates of tax, and in part to the increase in money incomes associated with rising prices.

(f) *Entertainments Tax.* The rate of Entertainments Tax, according to Amending Act No. 15 of 1922, is as follows:—For tickets of 1s., 1d.; exceeding 1s., 1d. for the first shilling, and $\frac{1}{2}$ d. for every subsequent sixpence or part of sixpence. The collections for the last five years are as follows:—

COMMONWEALTH ENTERTAINMENTS TAX COLLECTIONS, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales ..	107,033	136,932	234,327	272,373	276,786
Victoria ..	72,209	110,815	176,411	203,781	222,210
Queensland ..	30,086	45,930	62,671	75,332	75,048
South Australia ..	18,430	27,534	38,990	42,210	45,925
Western Australia ..	11,879	27,934	34,210	39,716	38,420
Tasmania ..	5,988	8,680	10,993	16,266	17,193
Northern Territory ..	273	301	309	150	93
Total ..	245,898	358,126	557,911	649,828	675,675

(g) *War-Time Profits Tax.* This tax came into force on the 22nd September, 1917. It provides for a tax on the amount by which the profits made in the war-time financial year (1st July to 30th June following), exceeds the pre-war standard of profits, which may be either:—(a) the average profits of two of the three years before 4th August, 1917, or (b) 10 per cent. on the capital employed in the business. The tax in respect of profits derived in the financial year 1st July, 1915, to 30th June, 1916, was 50 per cent., and in all subsequent years 75 per cent. The collections for the first five years are given in the accompanying table. The original section 2 of the War Time Profits Tax Assessment Act stated that this Act would apply to the profits of any business arising up to 30th June next after the Declaration of Peace in connexion with the late war. Subsequent to the signing of the armistice, on 11th November, 1918, the section was amended to accord with that intention, and thus fixed the final application of the Act to profits arising during the year ended 30th June, 1919. The figures for subsequent years represent delayed collections under this Act.

COMMONWEALTH WAR-TIME PROFITS TAX COLLECTIONS, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales ..	147,285	524,658	880,442	784,339	376,480
Victoria (a) ..	371,969	364,572	1,066,161	930,927	687,211
Queensland ..	33,526	125,329	230,283	122,728	83,892
South Australia ..	67,795	137,641	243,527	144,198	86,603
Western Australia ..	43,323	15,940	105,517	85,255	44,351
Tasmania ..	16,110	38,398	43,083	15,692	28,172
Total ..	680,008	1,206,538	2,569,013	2,083,139	1,306,709

(a) Including Central Office.

(h) *War Postage.* This was a new source of revenue derived from an additional halfpenny rate imposed on postages from the 28th October, 1918. The amount credited to "War Postage" is the excess over the normal increase of revenue from postage. The amount collected for the balance of the financial year 1918-19 was £463,317, and in 1919-20 it was £745,962. In 1920-21 it fell to £197,928, as credits under this head of revenue ceased on 1st October, 1920.

(iii) *Public Works and Services.*—(a) *Postal Revenue.* Particulars concerning this branch of revenue for each of the financial years from 1917–18 to 1921–22 are contained in the following table :—

COMMONWEALTH POSTAL REVENUE, 1917–18 TO 1921–22.

Particulars.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
	£	£	£	£	£
Private boxes and bags ..	34,926	35,672	37,188	40,044	42,606
Commission—					
Money orders and postal notes	129,651	133,955	147,175	169,256	172,861
Telegraphs	1,032,318	1,103,664	1,274,527	1,369,922	1,375,584
Telephones	1,731,149	1,876,928	2,159,449	2,431,980	2,724,552
Postage	2,625,262	2,726,524	2,874,730	4,142,781	4,682,964
Miscellaneous	208,884	233,779	251,686	234,586	322,087
Total	5,762,190	6,110,522	6,744,755	8,388,569	9,320,654

The item “Miscellaneous” includes a subsidy from the Commonwealth Bank for the conduct of Savings Bank business, the mail transit rates, and certain allowances.

(b) *Railway Revenue.* The Commonwealth Government is responsible for four lines, the Kalgoorlie–Port Augusta, the Port Augusta–Oodnadatta, the Darwin–Katherine River, and the Capital Territory line. The appended table shows the amounts paid into the credit of the Consolidated Revenue Fund on account of each of these railways for the past five years. In the case of the Port Augusta–Oodnadatta Railway the amount in the year 1917–18 was made up by fees, wharfage rates, etc., and was independent of the working receipts. Under an arrangement which came into effect on 1st January, 1914, this line is worked by the South Australian Government, and the Commonwealth Government receives the profit, if any, on the working, or pays the deficiency. Since 1914 there has always been a deficiency, which is met by a payment from the Commonwealth Government.

COMMONWEALTH RAILWAY REVENUE, 1917–18 TO 1921–22.

Railway.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
	£	£	£	£	£
Kalgoorlie–Port Augusta ..	164,203	150,856	233,564	221,386	201,084
Port Augusta–Oodnadatta ..	1,027	..	..	..	..
Darwin–Katherine River ..	35,172	45,725	31,783	12,761	14,370
Capital Territory	705	407	571	1,240	1,847
Total	201,107	196,988	265,918	235,387	217,301

(c) *Commonwealth Steamships.* About the end of June, 1916, the Commonwealth Government announced that owing to the difficulty of obtaining tonnage and to increasing freight charges it had purchased fifteen steamers to insure to producers, as far as possible, the transport of their produce. The price given was rather more than £2,000,000, the capital cost brought forward from 30th June, 1917, being £2,080,656. The profits for the year 1916–17 amounted to £327,336, and for the year 1917–18 to £576,164, a total of £903,500. Out of this amount the sum of £880,000 was transferred from the Trust Account to Consolidated Revenue in 1917–18, with the approval of the Treasurer. The Consolidated Revenue benefited further in 1918–19, the surplus earnings being £1,015,762. In the years 1919 to 1921 there was not a sufficient balance in the Trust Account to allow of a transfer to Consolidated Revenue, these transfers being taken from Cash Balances and not from Revenue Account Balances, as disclosed by the Profit and Loss and Balance-sheet Statements of the line.

(d) *Detained Enemy Vessels.* This is an item which first appeared in the Commonwealth accounts in 1914-15. For the first two years it appeared in the receipts of the Navy, but since 1916-17 it has ranked as a separate account. The fall in 1918-19 is due to the fact that gross receipts were paid into the Consolidated Revenue in 1917-18, and net receipts in 1918-19. The vessels are now incorporated in the fleet of the Government Line of Steamers.

(e) *Other Public Works and Services.* The most important items in 1917-18 were "Profit on sale of rabbit skins" £301,000, and "Profit on charter of vessels" £166,790. In 1918-19 they were "Profit under Wool Tops Agreement" £141,008, and "Profit on charter of vessels" £15,000. In 1919-20 they were "Profit under Cornsacks Distribution Account" £130,472, and "Profit under Wool Tops Agreement" £78,273. In 1920-21 they were "Profit under Wool Tops Agreement" £89,404, and "Profit on sale of coal to New Zealand Government" £51,555.

(iv) *Other Sources of Revenue.* (a) *Interest, Discount, etc.* The most important investments of the Commonwealth Government from which interest is derived are—Loans to States, General Trust Funds, Loans to the London Market, Fixed Deposits with the Commonwealth and other Banks, and certain advances and overdrafts. In 1919-20, the main receipts from this source were—Interest on Loans and Advances to States, £967,538; Interest on Bank Deposits, £210,873; and Interest on General Trust Funds, £176,701. In 1920-21 they were Interest on Loans and Advances to States, £1,482,569; Interest on General Trust Fund Investments, £243,115; and Interest on Bank Deposits, £165,000. In 1921-22 they included Interest on Loans and Advances to States, £1,789,615; Interest on General Trust Fund Investments, £264,424; Interest on Bank Deposits, £146,250; and Interest, Nauru Island Agreement, £93,987.

(b) *Coinage.* The Commonwealth Revenue under this head is derived from profit on coin issued, and for 1921-22 was made up of £143,923 for silver and £34,516 for bronze.

(c) *Defence.* The income from this source (which is derived from both Defence and Navy Offices) is mainly derived from sales of material and stores supplied, forfeitures, fines, costs, etc. In 1921-22, £87,662 was contributed by the Defence Department, and £62,635 by the Navy Office.

(d) *Patents, etc.* This heading includes Patents, Trade Marks, Copyright and Designs, the administration of which has been exclusively a Commonwealth concern for a very long time. In 1921-22, £31,005 was obtained from Patents, and £10,388 from Trade Marks, Copyright and Designs.

(e) *Defence Trust Account.* This is credited with receipts from Parliamentary appropriations, and from the Departments and the public for work done and material supplied. In the year 1921-22 the total receipts amounted to £832,151, and the expenditure to £629,066, leaving a balance of £203,085.

(f) *Unexpended Balance of London Orders.* The largely increased amount for the two years 1919-20 and 1920-21 is due to an amendment by the Treasury of the London Account Regulations, which superseded the system of charging votes upon the remittance of amounts from the Commonwealth, and made such charge only when payment in London is actually completed. This necessitated the closing of the Trust Account for London Liabilities, and the transfer of unexpended balances to the revenue. There were no unexpended balances in 1921-22.

(g) *Miscellaneous.* This includes several items which are either small in themselves, or not included under separate headings, as they are virtually non-recurring. Thus in 1921-22 there was a payment into revenue of £835,000 on account of the Army of Occupation, and one of £183,737 on account of Sugar—Interest on Overdraft.

Division III.—Expenditure.

1. *Nature of Commonwealth Expenditure.*—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the "book-keeping"* system, into three classes, viz. :—

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

* For an exposition of the "book-keeping system" see Commonwealth Year Book No. 6, page 780.

Of these three, only the first two were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution, the expenditure on transferred services was, under the "book-keeping" system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure was regarded as expenditure on new services, and distributed amongst the States *per capita*. Under the arrangement, which superseded the "book-keeping" system, a specific subsidy of 25s. per head of population is made annually by the Commonwealth to the States, and there is no further debiting of expenditure to the several States.

2. **Total Expenditure.**—The total expenditure by the Commonwealth Government and the expenditure per head of population during the period 1917-18 to 1921-22 are shown in the following table :—

COMMONWEALTH EXPENDITURE, 1917-18 TO 1921-22.(a)

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Total	30,499,494	38,262,585	46,062,610	58,677,445	57,861,511
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Per head	6 2 5	7 10 7	8 13 8	10 16 10	10 10 0

(a) Including balance paid into Trust Funds, but excluding subsidies to States.

The largely increased expenditure in recent years is due partly to Old-age and Invalid Pensions, but mainly to the expenditure from Revenue upon War Services and to the general rise in prices.

3. **Details of Expenditure from Consolidated Revenue.**—(i) *General.* The following table gives details of the expenditure from Consolidated Revenue, and is arranged in such a manner as to show under each Department the expenditure on behalf of that Department :—

**COMMONWEALTH EXPENDITURE.—CONSOLIDATED REVENUE,
1917-18 TO 1921-22.**

Heads of Expenditure.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Cost of Departments—					
Governor-General	26,893	23,875	27,215	30,707	27,897
Parliament	237,464	245,713	348,415	323,359	346,192
Prime Minister	234,568	231,173	312,408	434,939	733,528
Attorney-General	96,930	94,686	111,007	132,446	148,045
Treasury	2,902,578	1,222,580	2,479,078	3,764,051	2,566,573
Trade and Customs	715,129	817,505	992,142	964,993	889,121
Defence	2,834,321	3,056,747	2,912,639	4,184,719	4,456,198
Postmaster-General	5,349,994	5,449,722	6,136,920	7,305,243	8,188,686
Home and Territories	468,701	489,163	478,281	746,569	695,708
Works and Railways	672,893	683,874	714,196	698,392	609,327
Health .. ..	..	..	..	..	172,227
Total	13,539,471	12,315,038	14,512,301	18,585,418	18,833,502
Miscellaneous—					
New Works	622,203	405,656	335,154	2,098,203	2,571,794
War Services	11,863,250	21,255,101	24,579,099	30,464,247	29,136,541
Carried forward in respect of Pensions	3,925,820	3,476,478	5,724,806	6,618,327	6,408,424
Interest—State Loans Act	548,750	810,312	911,250	911,250	911,250
Total	16,960,023	25,947,547	31,550,309	40,092,027	39,028,009
Grand Total	30,499,494	38,262,585	46,062,610	58,677,445	57,861,511

More detailed reference to the items included under the above general heads is furnished in the succeeding sub-sections.

(ii) *Cost of Departments*—(a) *Governor-General*. In section 30 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connexion with the Governor-General and establishment for the five years 1917-18 to 1921-22 is as follows :—

**EXPENDITURE.—GOVERNOR-GENERAL AND ESTABLISHMENT,
1917-18 TO 1921-22.**

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Salary	10,000	10,000	10,000	10,000	10,000
Governor-General's Establishment ..	6,351	4,390	9,243	13,127	11,708
Contingencies (a)	10,542	9,485	7,972	7,374	6,189
Interest on Commonwealth Treasury Bills ..	..	..	..	206	..
Total	26,893	23,875	27,215	30,707	27,897

(a) Represents official services outside the Governor-General's personal interests, and carried out in the main at the instance of the Government.

(b) *Parliament*. Under this head have been grouped all the items of expenditure connected with the Parliamentary government of the Commonwealth, including the salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the five years 1917-18 to 1921-22 are furnished in the table given hereunder :—

EXPENDITURE.—COMMONWEALTH PARLIAMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Salaries of Ministers	14,901	15,300	15,231	15,368	15,300
Allowances to Senators	20,854	20,760	22,376	34,710	34,916
Allowances to Members of House of Representatives	42,796	42,261	40,993	69,133	69,395
Officers, staff, contingencies, etc. ..	39,583	37,584	40,182	51,661	63,253
Repairs, maintenance, etc.	1,518	1,568	1,663	1,686	2,529
Printing	16,864	26,863	21,347	23,810	24,912
Travelling expenses of Members and others	9,950	8,913	9,379	11,996	12,262
Insurance	342	342	342	342	342
Electoral Office	53,717	53,159	60,677	70,200	72,816
Election expenses	4,355	2,459	98,110	3,037	5,201
Administration of Electoral Act ..	27,425	31,460	33,859	28,477	42,548
Miscellaneous	5,159	5,044	4,256	12,939	2,718
Total	237,464	245,713	348,415	323,359	346,192

In section 66 of the Constitution, provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers

of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This was modified in 1915-16, when the Minister of the Navy was given separate Cabinet rank. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides, each such allowance shall consist of £400 a year reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members came under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907. During 1920, the salaries of members of both Houses were further increased to £1,000 per annum.

(c) *Prime Minister's Department.* This department was created during the financial year 1911-12. In addition to the Prime Minister's Office it includes the Audit Office taken from the Treasury, the Executive Council taken from the External Affairs Department, and the Public Service Commissioner's Office taken from the Home Affairs Department. In 1916-17 it assumed control of the High Commissioner's Office in London, which was detached from the old External Affairs Department when the latter was merged in the Home and Territories Department. It has recently enlarged its activities by administering the affairs of the Mandated Territories. The expenditure for the last five years is shown in the following table :—

EXPENDITURE.—PRIME MINISTER'S DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Salaries, contingencies, etc.	25,764	33,328	29,125	32,876	38,191
Executive Council	160	177	210	250	165
Audit Office	18,480	25,486	27,745	32,211	34,689
Rent, repairs, etc.	16,489	7,028	6,997	7,214	9,021
Public Service Commissioner's Office ..	22,329	23,129	26,757	30,546	34,960
High Commissioner's Office	52,166	57,106	66,037	75,764	69,417
Interest on Commonwealth Securities	23,467	25,781	27,464	21,620	204,316
Sinking Fund on Commonwealth Securities	2,433	2,433	2,433	433	550
Mail Service to Pacific Islands	35,021	28,800	21,600	43,501	49,167
Contribution to Secretariat, League of Nations .. ..	..	..	..	68,350	40,984
Immigration .. ..	..	..	..	..	72,175
Interest on Transferred Properties ..	..	..	..	..	30,370
Miscellaneous	38,259	27,905	104,040	122,174	149,523
Total	234,568	231,173	312,408	434,939	733,528

The "Miscellaneous" vote for 1919-20 included £32,979 as a grant for the relief of distress caused by the maritime strike; £17,301 for the expenses incurred during the visit of the Prince of Wales; £10,994 for the Basic Wage Commission; £15,727 for the Australian Commission in the United States; and £10,000 as a reward to Sir Ross Smith. In 1920-21 the largest single item was one of £50,371, representing the balance of the expenses of the visit of the Prince of Wales. The remaining items included £10,881 for Basic Wage Commission; £5,418 for Conferences on Coal Industry disputes; £5,802 for Commonwealth representation at Geneva Conference; and £4,000 for Imperial Mineral Resources Bureau Grant. In 1921-22 it included £49,070 for relief of distress in Europe, and £32,500 as payment of the South African Government on account of wheat.

(d) *Attorney-General's Department.* The extra expenditure connected with this Department of late years has been caused in large measure by the extension of the Federal

High Court, and an increase in the item "Patents, Trade Marks, etc." Details for the five years 1917-18 to 1921-22 are furnished hereunder:—

EXPENDITURE.—ATTORNEY-GENERAL'S DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Attorney-General's Office	10,189	11,510	14,492	15,558	18,358
Crown Solicitor's Office	11,255	12,943	16,042	17,879	18,248
Salaries of Justices of High Court ..	21,500	21,500	22,448	21,556	21,500
High Court expenses	9,852	8,837	11,922	12,925	12,276
Court of Conciliation and Arbitration	7,900	6,242	7,650	9,112	4,949
Rent, repairs, etc.	9,414	4,839	4,733	5,889	8,200
Patents, Trade Marks, etc.	19,253	23,875	32,321	42,389	43,602
Investigation Branch .. ..	..	..	..	4,244	7,496
Public Service Arbitrator's Office ..	..	..	..	1,036	4,524
Miscellaneous	7,567	4,940	1,399	1,858	8,892
Total	96,930	94,686	111,007	132,446	148,045

(e) *Treasurer's Department.*—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Pensions Department, and the Taxation Office. Details of the expenditure of this Department for the last five years are given in the following table:—

EXPENDITURE.—TREASURER'S DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Treasury	29,391	32,072	48,393	61,139	56,084
Taxation Office	281,523	311,330	375,710	513,422	592,149
Pensions Office	53,391	61,406	73,509	85,016	88,687
Maternity Allowance Office	12,280	11,209	12,708	15,902	15,143
Coinage	30,481	18,411	18,956	33,981	50,785
Rent, Repairs, etc.	20,491	18,715	25,676	28,090	33,002
Interest on Commonwealth Securities	12,273	..	..	41,223	..
Miscellaneous	7,696	93,597	29,132	34,277	77,693
Departmental Expenditure	447,526	546,740	584,084	813,050	913,543
Invalid and Old-age Pensions (a)	1,781,564	..	1,196,454	2,174,336	872,352
Maternity Allowance	634,428	620,080	625,865	700,760	690,700
Maintenance of persons in charitable institutions ..	39,060	55,760	72,675	75,905	89,978
Total	2,902,578	1,222,580	2,479,078	3,764,051	2,566,573

(a) In addition, the following amounts were spent from Trust Funds:—In 1917-18, £2,077,427; in 1918-19, £3,879,241; in 1919-20, £3,350,425; in 1920-21, £2,900,000; and in 1921-22, £4,417,704.

The fluctuations in the total expenditure on this Department are mainly due to the variations in the method of payment of the Invalid and Old-age Pensions, which, as explained in the footnote, are partly paid from Trust Funds. The increase in the departmental expenditure is largely on account of the Taxation Office. The "Miscellaneous" vote for 1918-19 included £78,344, temporary credits under certain Trust Fund accounts. For 1921-22 it included a loan of £25,000 to the Returned Soldiers' Woollen Company, and £11,034 for the Royal Commission on Taxation.

(f) *Trade and Customs.* Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar and other bounties and the expenses in connexion therewith. The administration of Patents, Trade Marks, and Copyright is now entrusted to the Attorney-General's Department, and that of Quarantine to the new Department of Health. Particulars for the five years 1917-18 to 1921-22 are given in the following table :—

EXPENDITURE.—TRADE AND CUSTOMS DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Chief Office	21,849	29,404	37,362	43,861	68,677
Customs (ordinary)	339,698	350,253	399,534	460,187	477,566
Navigation	555	211	1,479	8,100	18,188
Analyst	3,498	4,804	5,637	5,663	5,794
Audit (proportion)	4,525	4,617	5,538	7,940	6,869
Quarantine	50,748	150,820	100,030	100,583	..
Pensions and retiring allowances ..	16,545	17,213	17,186	16,803	16,946
Rents, repairs, etc.	20,945	18,066	20,933	24,386	23,089
Sugar and other bounties	15,418	30,460	16,292	24,406	29,793
Inter-State Commission	11,903	12,007	10,545	3,650	..
Lighthouses	133,837	137,364	147,349	168,314	160,518
Interest on transferred properties ..	79,294	43,951	77,795	71,469	42,497
Interest on Commonwealth securities	726	2,200	3,267	3,501	1,741
Bureau of Commerce and Industry ..	..	..	3,774	5,160	5,000
Institute of Science and Industry ..	6,981	13,131	13,109	16,042	17,201
Miscellaneous	8,607	3,004	132,312	4,928	15,242
Total	715,129	817,505	992,142	964,993	889,121

The rise in expenditure on quarantine and lighthouses in recent years has caused an increase in the expenditure on this Department. The large "Miscellaneous" vote in 1919-20 is due to an item of £130,036 paid to the Australian Wheat Board as profit on cornsacks.

(g) *Defence.* The expenditure in connexion with Defence, which in 1901-2 amounted to £861,218, had by 1921-22 grown to £4,456,198. The Military and Naval Departments having been again amalgamated in 1922, are shown under the one heading. Expenditure on the Air Service is included for the first time in 1920-21. Particulars for the last five years are as follows :—

EXPENDITURE.—DEFENCE, COMMONWEALTH, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Chief Office	89,339	86,832	108,429	125,491	150,384
Military	1,052,848	1,153,036	914,089	1,276,531	1,386,042
Naval	1,426,988	1,506,897	1,562,029	2,367,748	2,198,268
Air Services .. ..	..	..	..	62,888	155,282
Audit (proportion)	22,565	10,118	16,104	17,298	15,032
Pensions and retiring allowances	1,279	1,392	1,202	2,162	2,633
Rents, Repairs, etc.	73,678	79,222	78,461	108,728	107,312
Interest on transferred properties	129,548	136,699	130,471	122,325	93,586
Interest on Commonwealth securities	18,834	48,440	71,005	71,433	18,776
Miscellaneous	19,242	34,111	30,849	30,115	328,883
Total	2,834,321	3,056,747	2,912,639	4,184,719	4,456,198

The large sum under "Miscellaneous" for 1921-22 includes £300,000 for compensation under the Defence Retirement Act.

(h) *Postmaster-General's Department.* Full details of the expenditure of this Department are given in the table hereunder:—

EXPENDITURE.—POSTAL DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Chief Office	21,960	23,189	25,842	30,949	33,954
Postal Department (ordinary)	4,920,251	5,015,429	5,681,340	6,844,979	7,722,459
Audit (proportion) ..	2,635	2,888	6,224	8,182	8,927
Pensions and retiring allowances	59,174	64,720	67,842	75,057	81,171
Rents, repairs, etc. ..	60,070	60,756	62,415	86,824	101,047
Interest on transferred properties	212,227	210,908	214,815	186,070	186,752
Interest on Commonwealth Securities	42,150	46,420	52,832	49,562	19,516
Sinking Fund on Commonwealth Securities ..	16,271	16,271	16,271	16,193	16,193
Miscellaneous	15,256	9,141	9,339	7,427	18,667
Total	5,349,994	5,449,722	6,136,920	7,305,243	8,188,686

(i) *Home and Territories.* Under this Department, created in the financial year 1916-17, is placed the bulk of the old External Affairs Department (after the removal of the London office), and the Census and Statistics, and Meteorological Offices, taken from the old Home Affairs Department. The Darwin-Katherine River Railway is administered by the Works and Railways Department.

EXPENDITURE.—HOME AND TERRITORIES DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Chief Office	14,737	16,156	18,528	21,756	21,594
Census and Statistics	15,013	16,248	16,795	17,713	18,936
Meteorological Branch	25,971	28,209	29,706	84,923	88,932
Lands and Survey	14,449	15,935	17,280	22,236	22,226
Papua	51,918	51,260	51,492	62,656	179,245
Rents, repairs, etc.	10,493	14,905	13,207	16,380	15,941
Northern Territory	207,620	213,649	186,782	232,011	193,950
Federal Capital Territory ..	23,382	24,142	25,482	26,828	32,741
Norfolk Island	3,000	3,000	3,000	3,000	3,000
Interest on Commonwealth Securities (a)	74,548	84,881	91,572	54,032	34,280
Sinking Fund, Commonwealth Securities (a)	5,853	5,853	5,853	2,612	2,535
Miscellaneous	21,717	14,925	18,584	202,422	82,328
Total	468,701	489,163	478,281	746,569	695,708

(a) Includes Northern Territory.

The large "Miscellaneous" item in 1920-21 includes £149,150 special expenditure on the Census of 1921.

(j) *Works and Railways Department.* The great extension of Commonwealth Works and Railways led, in 1916-17, to the separation of these functions from the old Home Affairs Department and the constitution of a separate Department which also administers the railways which were formerly under the control of the old External Affairs Department. The expenditure for the last five years is as follows:—

EXPENDITURE.—WORKS AND RAILWAYS DEPARTMENT, 1917-18 TO 1921-22.

Details.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Chief Office	31,162	36,594	39,770	45,317	31,724
Kalgoorlie-Port Augusta Railway	232,726	237,204	264,798	292,168	255,776
Port Augusta-Oodnadatta Railway, and Northern Territory Railways	172,637	162,077	159,456	156,900	180,034
Interest on transferred properties	403	403	403	374	374
Interest on Commonwealth Securities	208,811	226,083	232,948	174,002	100,408
Sinking Fund on Commonwealth Securities	11,957	11,957	11,957	13,200	13,200
Rent, repairs, etc.	2,953	2,957	3,286	4,670	4,544
Royal Commission—Unification of Gauge .. .. .	..	..	..	..	9,229
Miscellaneous	12,244	6,599	1,578	11,761	14,038
Total	672,893	683,874	714,196	698,392	609,327

(k) *Health Department.* This department came into existence in the financial year 1921-22. Details of expenditure are as follow:—

EXPENDITURE.—HEALTH DEPARTMENT, 1921-22.

	£
Central Administration	9,601
Salaries, Contingencies, etc.	134,934
Interest on Treasury Bills	87
Interest on Transferred Properties	6,909
Rent and Repairs	10,065
Miscellaneous	10,631
Total	172,227

(iii) *Miscellaneous.* (a) *New Works.* Particulars of the expenditure on new works, etc., during the last five years are given in the following table :—

EXPENDITURE ON NEW WORKS, 1917-18 TO 1921-22.

Department.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Parliament .. ..	..	..	..	700	2,086
Prime Minister .. ..	..	..	..	1,653	1,029
Treasury	2,377	609	1	5,832	54,242
Trade and Customs ..	109,164	38,542	12,104	28,103	7,249
Defence	245,501	97,018	116,663	1,097,062	1,507,758
Postmaster-General ..	233,255	239,643	184,788	940,917	940,114
Home and Territories ..	27,718	22,156	21,439	23,564	31,463
Works and Railways ..	4,188	7,688	159	372	109
Health .. ..	..	..	..	..	27,744
Total	622,203	405,656	335,154	2,098,203	2,571,794

(b) *War Services.* Full details concerning the expenditure from Consolidated Revenue upon War and Repatriation will be found in a later sub-section.

(c) *Interest—State Loans Act.* The amount of £911,250 is the interest on the sum of £16,750,000 borrowed by the Commonwealth in London and advanced to the States (except New South Wales). Of this amount £4,000,000 carried interest at $5\frac{1}{4}$ per cent., and £12,750,000 at $5\frac{1}{2}$ per cent.

Division IV.—Subsidy Paid to States.

1. *Payments to the Several States.*—The following table furnishes particulars of the subsidies paid to the States on account of each of the financial years 1917-18 to 1921-22 :—

COMMONWEALTH SUBSIDY PAID TO STATES, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	2,317,783	2,380,139	2,472,717	2,533,234	2,632,036
Victoria	1,739,481	1,764,239	1,847,035	1,878,449	1,918,967
Queensland	845,913	856,300	895,454	912,628	952,728
South Australia	535,808	549,593	578,094	588,603	621,862
Western Australia	561,129	556,505	569,512	564,735	554,704
Tasmania	340,260	347,557	357,630	362,514	355,238
Total	6,340,374	6,454,333	6,720,492	6,840,163	7,035,535

The amounts of subsidy given in the table are based upon an annual payment of £1 5s. per capita, with special concessions to Western Australia and Tasmania, and are in accordance with the provisions of the "Commonwealth Surplus Revenue Act" passed in 1910 which came into effect on the 1st July of that year for a period of ten years, subject to revision on the expiration thereof. This period expired on the 30th June, 1920, and it was then possible for Parliament to extend the Act for a further period, or to enter into new financial relations with the States. The "per capita" payment was continued provisionally in the meantime.

§ 3. Trust Fund and Miscellaneous.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1922, amounted to £13,740,016, as compared with £82,375,522 for the corresponding date in the year ending 30th June, 1920. This enormous decline is the result of the transference of the administration of the Australian Notes Account to the Commonwealth Bank. Details concerning the most important trust accounts are contained in the following table :—

COMMONWEALTH TRUST FUND, 30th JUNE, 1922.

Trust Accounts.	Balance at 30th June, 1922.	Trust Accounts.	Balance at 30th June, 1922.
	£		£
Australian Notes and Bond Printing ..	26,190	Other Trust Moneys ..	901,990
Australian Soldiers Repatriation Con- tribution ..	163,698	Port Augusta Railway Sinking Fund ..	50,234
Australian War Records Publications ..	18,492	Public Trustee ..	37,023
Cockatoo Island Dockyard ..	146,209	Railway Plant and Stores Suspense ..	69,863
Commonwealth Government Ships ..	18,803	Railway Provision Stores ..	10,471
Defence—Clothing Material ..	174,168	Ships Insurance ..	438,544
Compensation ..	300,000	Small Arms Ammunition Factory ..	13,300
Small Arms ..	19,170	State Loans Expenses Suspense ..	63,709
Small Arms Ammunition ..	194,361	Suspense ..	14,117
Stores London Liabilities ..	475,201	Treaty of Peace—Clearing Office Account ..	33,789
Deferred Pay ..	390,092	Liquidation Account ..	140,879
General Average Deposits ..	11,767	Unclaimed Militia Pay ..	17,448
Insurance Lost Enemy Vessels ..	446,904	War Loan Securities Repurchase ..	918,173
International Postal and Money Order ..	12,745	War Pensions ..	3,204,212
Invalid and Old-age Pensions ..	3,204,212	War Savings Certificates Interest ..	112,276
Loans Sinking Fund ..	957,752	War Service Homes Insurance ..	36,089
London Loans Expense Suspense ..	226,191	Wireless Workshops ..	26,606
Money Order ..	674,900	Miscellaneous ..	63,010
New Guinea Agency ..	15,170		
Northern Territory ..	112,258	Total ..	13,740,016

2. **London Flotations on behalf of States.**—Act No. 17 of 1916 authorized the Treasurer to borrow £8,940,000 in the United Kingdom, and Act No. 16 of 1917 to raise £8,000,000, and to lend the amount to the several States, other than New South Wales, and, pending the borrowing of the money, to advance the amounts set forth in the Acts out of loans made by the Government of the United Kingdom to the Commonwealth. In pursuance of these Acts, £16,750,000 was distributed to the States up to 30th June, 1922. The money was allocated to the States as follows :—

COMMONWEALTH LOANS RAISED IN LONDON ON BEHALF OF STATES
AS AT 30th JUNE, 1922.

State.	Amount.
	£
Victoria	1,954,000
Queensland	5,462,500
South Australia	4,116,000
Western Australia	4,150,500
Tasmania	1,067,000
Total	16,750,000

In addition to these amounts, the Commonwealth Government has made further advances to the States for various purposes which are set out as follows, the amounts representing what was outstanding at 30th June, 1922 :—

ADVANCES TO STATES AT 30th JUNE, 1922.

Advances to—	Amounts.	Total.
	£	£
Government of New South Wales—		
Settling returned soldiers	9,811,213	
Silos for wheat storage	1,000,000	10,811,213
Government of Victoria—		
Settling returned soldiers	11,816,927	
Providing employment	92,000	11,908,927
Government of Queensland—		
Settling returned soldiers	2,563,784	
Providing employment	400,000	
Forestry	71,132	3,034,916
Government of South Australia—		
Settling returned soldiers	2,567,007	
Providing employment	28,796	2,595,803
Government of Western Australia—		
Settling returned soldiers	4,054,917	4,054,917
Government of Tasmania—		
Settling returned soldiers	2,075,143	2,075,143
Total .. ..	..	34,480,919

3. **Surplus Revenue.**—Until the end of 1906–7, the balance of the Consolidated Revenue Fund was paid to the States. From 1907–8 until the abolition of the book-keeping provisions of the Constitution the States received only three-fourths of the net Customs and Excise Revenue, and the balance of the Consolidated Revenue Fund was transferred to the Invalid and Old-age Pensions Trust Account and the Naval Defence Trust Account to provide for expenditure in subsequent years. A statement of surpluses and deficiencies for the past five years is appended hereto.

COMMONWEALTH SURPLUS REVENUE, 1917–18 TO 1921–22.

Year.	Surplus.	Deficiency.	Accumulated Surplus at end of Year.
	£	£	£
1917–18	1,848,393	..	3,925,820
1918–19 .. ..	..	402,763	3,523,057
1919–20	2,201,749	..	5,724,806
1920–21	893,521	..	6,618,327
1921–22 .. ..	..	209,903	6,408,424

§ 4. Commonwealth Loan Funds and Public Debt.

1. **General.**—Although it was not until 1915 that the Federal Government came into the loan market as a borrower, there had previously existed a Commonwealth Public Debt which included several items, such as the balance of the debt taken over from South Australia and the money owing to the States for transferred properties. The debt still

includes the items mentioned, in addition to the General Loan Fund, the loans for military purposes, etc. In view of the large expansion of the Public Debt, and its present importance in Commonwealth public finance, the different items are treated seriatim in the following sub-sections.

2. Loans taken over from South Australia.—The first portions of the debt were contracted at the beginning of 1911, when the Commonwealth assumed responsibility for the payment of interest on transferred properties (further dealt with in sub-section 4) and also for the administration and the liabilities of the Northern Territory and the Port Augusta—Oodnadatta Railway. At 30th June, 1911, the debt on account of the former was £3,657,836, and on account of the latter, £2,274,486—a total of £5,932,322. As the securities fall in they are redeemed by the Commonwealth Government, the money required being taken from the Loan Fund, which was created for this purpose, amongst others. This item is thus a constantly diminishing one, and on 30th June, 1922, stood at £3,951,746, of which £2,209,294 was on account of the Northern Territory, and £1,742,452 on account of the railway.

3. Loan Fund for Public Works, etc.—Up to 1911 the Commonwealth Government had met its Public Works expenditure out of revenue. In that year, however, in view of the heavy prospective cost of the Transcontinental Railway and the Federal Capital Territory, it was decided to institute a Loan Fund similar to those of the States. The initiation of this Fund was greatly assisted by the fact that the Treasury at that time held a large quantity of gold, principally on behalf of the Australian Notes Account, at that time only just inaugurated. Up to 30th June, 1914, the money required for loan expenditure was obtained mainly from this source at 3½ per cent., and inscribed stock of an equivalent value created. Since the outbreak of war the money required for the Loan Fund has been mainly obtained by the issue of Treasury Bills. The details of the expenditure for the last five years are given in the following table:—

COMMONWEALTH LOAN EXPENDITURE FOR WORKS, 1917 TO 1922.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Railways Construction—					
Trans-Australian Railway	410,596	156,187	138,164	76,009	69,072
Northern Territory	42,178	1,226 ^c	2,539	1,654	6,436
Other	4,260	2,193	91 ^c	4,258	8,946
Loan Redemption—					
Northern Territory .. ..	..	339,408	..	223,814	..
Papua—Railways and Wharves .. ..	..	..	..	20,000	15,700
Posts and Telegraphs—					
Purchase of land	2,811	1,692	596 ^c	920	7,706
Construction of conduits, etc.	67,375	116,760	305,538	9 ^c	795,085
Acquisition of land (a)—					
London	69,991	46,120	58,611	55,727	18,651
Perth	24,347	18,291	23,073	21,644	45,000
Federal Capital Territory	90,703	1,395	11,968	83,232	148,425
Elsewhere (b)	37,622	67,488	37,375	5,474	32,757
Defence Machinery; Dockyards, Cockatoo Island; Naval Bases, etc.	375,913	510,278	282,044	305,721	159,769
Ship Construction	355,397	..	..	2,999,630	3,369,118
General Arsenal; Small Arms, etc.; Cordite	27,253	58,761	350,616	153,083	181,095
Lighthouses	42,473	16,115	26,795	29,746	14,556
Contribution under River Murray Waters Act .. ..	..	55,760	39,241	56,722	112,372
Acetate of Line Factory	52,410	18,001	..	2,420	..
Plant and Stores Suspense Account	200,000	..	..	..	..
Wireless Telegraphy	118	22,668	11,509	..	..
Immigration .. ..	..	..	..	..	133,848
Miscellaneous .. ..	..	..	..	61,681	127,967
Total	1,803,447	1,429,891	1,286,786	4,101,726	5,246,503 ^d

(a) Including cost of erection of buildings.

(b) Excluding purchases for Posts and Telegraphs.

(c) Credited by repayment.

(d) In addition £7,007,107 was carried down to General Loan Fund Redemption Account from which £6,185,028 was spent in redeeming Treasury Bills.

4. Properties Transferred from States.—At the time of Federation, when the Commonwealth took over the control of a great many departments which had previously been administered by the States, a large amount of property was handed over to the Commonwealth Government. A valuation was made, with results set out in detail in Official Year Book No. 14, page 694, and the Commonwealth now pays interest to the States on account of all the transferred properties.

Since the valuation some transfers and retransfers have been made. The estimated value of the transferred properties for the last five years is given in the table in sub-section 7 hereinafter.

5. War Loan from the Imperial Government.—On the outbreak of the European war in 1914, the Commonwealth Government contracted a loan from the Imperial Government for the purpose of financing the large military expenditure which was seen to be inevitable. At first, the arrangement was that the Imperial Government should advance the sum of £18,000,000 in twelve monthly instalments of £1,500,000 each. It was soon found, however, that this would be insufficient, and the Imperial Government made a fresh advance of £6,500,000, also to be paid in monthly instalments. A third loan of £25,000,000 was subsequently negotiated, of which £12,000,000 was received by 30th June, 1916, and £11,000,000 in 1916–17. In addition to this capital indebtedness, a further sum of £42,696,500 was due to the British Government for the maintenance of Australian troops.

The last item of nearly £43,000,000 remained unfunded until early in 1921. An arrangement was then concluded with the Imperial Government, by means of which almost the entire debt (nearly £92,500,000) was consolidated. The Commonwealth Government undertook to extinguish the debt by annual payments of approximately £5,550,000, spread out over about 35 years, this payment representing 6 per cent. of the original debt. This provides for interest at nearly 5 per cent., and a sinking fund of a little more than 1 per cent., and may be regarded as a very satisfactory arrangement for the Commonwealth, since it entails only a moderate rate of interest, and provides for the ultimate extinction of nearly one-fourth of the National War Debt. The amount outstanding on 30th June, 1922, was £91,453,288, which will diminish steadily year by year owing to the operation of the sinking fund.

6. Flotation of War Loans in Australia.—In addition to the advances from the Imperial Government, the Commonwealth Government has raised large amounts of money for the prosecution of the war by direct application to the investing public of Australia.

Full details of the seven War Loans and the first Peace Loan are given in Official Year Book No. 14. In the financial year 1920–21 a second Peace Loan was floated with a currency of 10½ years and a rate of interest of 6 per cent. In the financial year 1921–22 a third Peace Loan was floated with a currency of 9½ years and a rate of interest of 6 per cent. It was issued at 96 and matures with the second Peace Loan on the 15th December, 1930. Totals for the ten issues are given in the tables hereunder. The first table refers to the gross total :—

COMMONWEALTH LOANS LOCALLY RAISED.—TOTAL TO 30th JUNE, 1922.

Local Loans.	Number of Subscribers.			Amount Subscribed.		
	Inscribed Stock.	Treasury Bonds.	Total.	Inscribed Stock.	Treasury Bonds.	Total.
	No.	No.	No.	£	£	£
Total	123,683	710,069	833,752	132,601,940	117,570,500	250,172,440

The next table shows the net proceeds of the loans.

COMMONWEALTH LOANS LOCALLY RAISED.—NET PROCEEDS TO 30th JUNE, 1922.

Local Loans.	Deductions.			Net Proceeds of Loan.
	Accrued Interest.	Flotation Expenses.	Total.	
Total	£ 2,800,642	£ 761,174	£ 3,561,816	£ 246,610,624

7. *Commonwealth Public Debt.*—(i) *Total Debt.* Separate consideration has already been given to the items composing the Public Debt. The table appended shows the debt of the Commonwealth (apart from the States) at yearly intervals since 1918.

COMMONWEALTH PUBLIC DEBT AS AT 30th JUNE, 1918 TO 1922.

Details.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Balance of loans taken over from South Australia—					
(a) On account of Northern Territory	2,772,516	2,433,108	2,433,108	2,209,294	2,209,294
(b) On account of Oodnadatta railway	1,759,003	1,759,003	1,759,003	1,759,003	1,742,452
Value of properties transferred by States	11,202,515	11,202,619	11,440,462	11,536,139	11,186,169
Inscribed Stock	4,580,000	4,580,000	4,580,000	8,764,716	23,764,716
Treasury Bills	6,240,990	7,670,881	9,815,600	8,094,153	2,843,125
War Loan from British Government ..	49,082,059	49,082,059	49,082,059	92,480,156	91,453,288
Commonwealth Internal Loans ..	143,190,680	184,437,870	207,184,380	232,819,660	241,879,840
Accrued Deferred Pay, A.I.F. ..	10,309,908	5,500,000	260,000	14,720	
Loans raised on behalf of States ..	12,000,000	16,750,000	16,750,000	16,750,000	16,750,000
Gratuities			30,000,000	25,279,925	23,088,153
Miscellaneous	42,917,398	42,355,207	48,005,293	2,012,258	1,153,472
Total	284,055,069	325,770,747	381,309,905	401,720,024	416,070,509
Commonwealth Debt <i>per capita</i> ..	£57 0 8	£63 7 6	£71 19 0	£73 12 9	£74 14 6

It will be noticed that the amount of the Commonwealth Internal Loans falls somewhat short of the totals of the ten issues in the table immediately preceding the above. This is owing to the fact that stock to a considerable amount has been presented as payment of Estate Duty, and cancelled, the payments being accepted in accordance with the provisions of section 5 of the Commonwealth Inscribed Stock Act 1915. The amount of £241,879,840 is the balance of the ten issues. To this must be added £1,142,182 raised by the sale of War Savings Certificates, and £11,290 by the sale of War Savings Stamps. The item "Miscellaneous" in the year 1921–22 is made up of the last two amounts.

(ii) *Place of Flotation.* The loans taken over from South Australia, which constituted the first portion of the Federal Public Debt, included both London and Australian securities. The presence in the Treasury of a large holding of gold, and the moderate rate of interest ruling on gilt-edged securities, made the conditions in 1911 and for some little time afterwards very favourable for the flotation of local loans. London securities were redeemed as they fell due, and replaced by the 3½ per cent. stock of the Loan Fund. Consequently, up to 1914 the amount of the securities repayable in London fell steadily, and the amount repayable in Australia rose rapidly. In 1915 the military loan from the Imperial Government caused a sharp rise in the amount of the securities repayable in London, which was maintained in the two following years. This was, however, more than offset by the flotation of the local war loans. The appended table gives particulars

of Commonwealth loans which have been floated in London and Australia respectively during the last five years. A separate column is devoted to the cost of the transferred properties, which, for obvious reasons, it is impossible to allocate.

COMMONWEALTH PUBLIC DEBT.—PLACE OF FLOTATION, 1918 TO 1922.

Year ended 30th June—	Payable in—		Value of Transferred Properties.	Total.
	London.	Australia.		
	£	£	£	£
1918	102,579,102	170,273,452	11,202,515	284,055,069
1919	106,123,102	208,445,026	11,202,619	325,770,747
1920	111,680,602	258,188,841	11,440,462	381,309,905
1921	117,322,199	272,861,686	11,536,139	401,720,024
1922	131,278,780	273,605,560	11,186,169	416,070,509

(iii) *Amount of Debt at Various Rates of Interest.* When the first debt was taken over from South Australia, it consisted in the main of a mass of securities varying from 3 per cent. to 4 per cent., the average rate of interest for the first year being £3 12s. 4d. For the first three years the increase in the debt was due almost entirely to the expansion of the 3½ per cent. stock of the Loan Fund, consequently the average rate of interest fell steadily, until on 30th June, 1914, it stood at £3 11s. 10d. Then came the loans for military purposes, and the fall in the average rate was ultimately converted into a rise which was steadily maintained until at 30th June, 1922, the average rate stood at £4 19s. 9d.

The accompanying table gives particulars of rates of interest for the five financial years ended 30th June, 1922 :—

COMMONWEALTH PUBLIC DEBT.—RATES OF INTEREST, 1918 TO 1922.

Rates of Interest.	Year ended 30th June—				
	1918.	1919.	1920.	1921.	1922.
%	£	£	£	£	£
3	35,063	35,063	35,063	35,063	35,063
3½	17,217,430	17,217,534	17,455,377	15,469,528	15,119,558
£3/12/3	720,411	720,411	720,411	720,411	703,860
3¾	1,394,008	1,054,600	1,054,600	833,870	833,870
4	8,451,270	9,881,161	12,025,880	8,304,433	5,053,405
4½	200,261,846	192,766,897	192,130,633	126,769,038	122,093,692
£4/18/4 .. ..	..	..	..	92,480,156	91,453,288
5	43,975,041	87,345,081	111,137,941	64,576,210	61,280,220
5½	4,000,000	4,000,000	34,000,000	29,279,925	27,088,153
5¾	8,000,000	12,750,000	12,750,000	12,750,000	12,750,000
5¾ .. ..	..	..	..	2,000,000	..
6 .. ..	..	..	..	48,501,390	79,659,400
Total	284,055,069	325,770,747	381,309,905	401,720,024	416,070,509
Average rate of interest	£4/10/9	£4/12/2	£4/13/7	£4/17/11	£4/19/9

(iv) *Amount of Interest Payable.* A table is appended showing the amounts payable as interest on the Commonwealth Public Debt as at 30th June in the years 1918 to 1922 inclusive. The rapid increase is due not only to the great expansion of the War Loan Fund, but also to the high rate of interest on recent loans.

COMMONWEALTH PUBLIC DEBT.—INTEREST PAYABLE, AS AT 30th JUNE.

Year.				Interest Payable.
				£
1918	..	..	..	12,879,793
1919	..	..	..	15,017,497
1920	..	..	..	17,847,623
1921	..	..	..	19,668,320
1922	..	..	..	20,751,516

(v) *Dates of Maturity.* The dates of maturity of the several portions of the Commonwealth debt are shown hereunder. The Commonwealth Government has refrained from issuing interminable stock, although as regards about one-tenth of the debt no definite date of maturity had been assigned on 30th June, 1922. It will be noticed that about £212,000,000 falls due in the space of four years, 1923–27, the bulk of this being represented by the balance of the first eight internal loans.

COMMONWEALTH PUBLIC DEBT.—DUE DATES OF AMOUNTS OUTSTANDING ON
30th JUNE, 1922.(a)

Due Dates.		Amounts.	Due Dates.		Amounts.	Due Dates.		Amounts.
		£			£			£
1922	..	525,667	1935	..	1,992,632	1948	..	3,671,520
1923	..	39,871,953	1936	..	3,048,441	1949	..	3,854,253
1924	..	24,886,479	1937	..	2,152,607	1950	..	4,046,080
1925	..	73,713,843	1938	..	2,260,132	1951	..	4,247,875
1926	..	1,327,965	1939	..	2,540,844	1952	..	4,459,293
1927	..	72,459,146	1940	..	2,489,772	1953	..	4,681,233
1928	..	1,399,569	1941	..	12,613,280	1954	..	4,914,219
1929	..	1,513,748	1942	..	2,743,344	1955	..	5,158,801
1930	..	61,941,963	1943	..	2,879,881	1956	..	4,028,923
1931	..	1,607,842	1944	..	3,023,214	1972	..	3,764,716
1932	..	1,687,865	1945	..	3,173,680	Indefinite	..	42,889,330
1933	..	1,771,870	1946	..	3,331,635			
1934	..	1,899,443	1947	..	3,497,451			
						Total	..	416,070,509

(a) Those loans in the case of which the Government has the option of redemption during a specified period have been in each case classified according to the latest date of maturity.

The graphs accompanying this chapter illustrate the rise in the revenue, public debt, and taxation of the Commonwealth and States since 1902, the year 1901–2 being the first complete financial year since Federation.

(vi) *Sinking Fund.* The Commonwealth Government has established a sinking fund against most of the securities which constitute its public debt. Part of the inscribed

stock issued for works purposes carries a sinking fund of 5 per cent., and the remainder one of $\frac{1}{2}$ per cent. The internal issues carry sinking funds, partly of $\frac{1}{2}$ per cent., and partly of 1 per cent. The War Savings Certificates carry a sinking fund of $\frac{1}{2}$ per cent., and the Northern Territory and Port Augusta—Oodnadatta Railway loans one of $\frac{1}{4}$ per cent. These sinking funds are invested partly in Treasury Bills, partly in Commonwealth Inscribed Stock, and partly in Bonds (War Issues). The situation of the Sinking Funds, as at 30th June, 1922, is set out in the accompanying table :—

COMMONWEALTH PUBLIC DEBT.—SINKING FUNDS, 1918 TO 1922.

30th June—	Total Accumulation to date.	Total Securities Cancelled to date.	Balance Available.
	£	£	£
1917 ..	1,611,903	598,854	1,013,049
1918 ..	2,454,235	1,087,252	1,366,983
1919 ..	3,740,824	1,636,621	2,104,203
1920 ..	5,139,281	2,969,980	2,169,301
1921 ..	8,391,349	7,386,822	1,004,527
1922 ..	10,292,881	9,335,129	957,752

The Imperial Government loan comes in a different category from the others since it is being liquidated by the funding arrangement described in detail on a previous page.

§ 5. Cost of War and Repatriation.

1. **General.**—In view of the importance of the subject a further reference is here made to the cost of the war. The general policy of the Commonwealth Government has been to pay from Consolidated Revenue all recurring charges for interest, sinking fund, pensions, and other charges consequent upon the war, and part of the expense of repatriation. On the other hand, the whole direct cost of the war and the larger proportion of the cost of repatriation have been paid from loans. The total cost from both sources to the 30th June, 1922, is set out in the following table :—

COST OF WAR SERVICES TO 30th JUNE, 1922.

Year.	From Revenue.	From War Loan Fund.	Total.
	£	£	£
1914-15	640,217	14,471,118	15,111,335
1915-16	3,777,849	37,423,568	41,201,417
1916-17	8,421,654	53,114,237	61,535,891
1917-18	11,863,250	55,095,110	66,958,360
1918-19	21,255,101	62,192,889	83,447,990
1919-20	24,579,099	46,070,595	70,649,694
1920-21	30,464,247	26,859,446	57,323,693
1921-22	31,337,164	11,768,749	43,105,913
Total	132,338,581	306,995,712	439,334,293

2. **Expenditure from Revenue.**—The following table gives the details of the war expenditure from revenue for the last five years:—

WAR SERVICES EXPENDITURE FROM REVENUE, 1917-18 TO 1921-22.

Heading.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Special Appropriations—					
Interest	7,052,104	10,087,461	12,645,902	13,519,547	12,324,208
Sinking Fund	761,191	1,200,713	1,312,812	3,168,820	1,987,640
War Pensions and Gratuities .. ..	..	4,827,368	5,859,862	6,013,514	6,113,526
Annual Votes : Departments—					
Defence and Navy	532	272,918	143,771	996,537	599,444
Treasury	3,043,046	3,546,328	1,956,601	2,835,903	5,820,245
Prime Minister	999,198	8,194	1,275	7,845	14,307
Trade and Customs	7,179	9,238	9,483	17,114	12,681
Repatriation .. ..	..	1,300,044	2,614,979	3,867,706	2,239,754
Home and Territories .. ..	..	..	..	..	24,400
Works and Railways .. ..	..	2,837	34,414	37,261	145
Attorney-General .. ..	..	..	..	..	191
Total	11,863,250	21,255,101	24,579,099	30,464,247	29,136,541

The large sums debited to the Treasury include sums payable as interest to the Imperial Government.

3. **Expenditure from War Loan Fund.**—The following table gives the details of the war expenditure from loans, showing the expenditure on account of each Department, etc. :—

EXPENDITURE FROM WAR LOAN FUND, 1917-18 TO 1921-22.

Department, Etc.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Defence and Navy	53,447,184	56,623,912	21,559,812	599,419	(a) 311,530
Treasury	1,128,907	5,314,153	15,379,318	15,330,886	6,603,039
Prime Minister	420,759	120,863	140,713	1,678,775	33,779
Trade and Customs	12,778	39,141	(a) 41,680	(a) 54,601	(a) 158
Repatriation .. ..	..	85,362	8,090,614	6,593,924	1,247,466
Home and Territories	85,482	4,458	36,531	7,199	4,381
Works and Railways .. ..	..	..	220,279	(a) 7,100	..
War Gratuities .. ..	..	..	685,008	2,710,944	2,191,772
Redemption of Treasury Bills .. ..	..	..	..	..	2,000,000
	55,095,110	62,192,889	46,070,595	26,859,446	11,768,749

(a) Repayment.

The large sums debited to the Treasury in the last three years are mainly on account of advances to the States. The money has been spent partly in settling soldiers on the land, and partly in providing reserve employment through Local Government Bodies. The expenditure under the heading "Repatriation" was incurred under the working of the War Service Homes Act of 1918.

§ 6. Old-age and Invalid Pensions.

1. **General.**—In previous issues of this work an account has been given of the introduction of the old-age pension system into Australia, together with a detailed description of the Commonwealth Invalid and Old-age Pensions Act of 1908 which became operative on 1st July, 1909. (See Year Books, Nos. 3 to 8.) An amendment of this Act, assented to on 30th September, 1916, made a very important alteration. Section 24 originally enacted that the pension "shall not exceed the rate of twenty-six pounds per annum in any event, nor shall it be at such a rate as will make the pensioner's income, together with pension, exceed fifty-two pounds per annum." It was amended (a) by omitting the words "twenty-six pounds," and inserting in their stead the words "thirty-two pounds ten shillings", and (b) by omitting the words "fifty-two pounds" and inserting in their stead the words "fifty-eight pounds ten shillings." Section 26 originally enacted that if an applicant for pension was in receipt of board or lodging, the actual or estimated

value or cost of this should be counted as income, to an extent not exceeding five shillings per week. This was amended by omitting the words "five shillings" and inserting in their stead the words "seven shillings and sixpence."

In 1919 the Act was again amended, and the rate of pension raised to £39 per annum and the maximum amount allowable to £65 per annum. The estimated value of board and lodging was raised to 10s. per week.

In 1920 special provision was made for a permanently blind person, by which the amount of pension may be at such a rate (not exceeding £39) per annum, as will make his income, together with the pension, equal to an amount not exceeding £221 per annum or such other amount as is declared to be a basic wage.

2. **Old-age Pensions.**—(i) *Summary, 1922.* Details regarding Old-age Pensions as at 30th June, 1922, are as follows:—

OLD-AGE PENSIONS.—SUMMARY, 1922.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Claims examined during year ending 30th June, 1922 ..	5,334	3,838	1,986	1,054	953	700	13,865
Claims rejected	809	381	384	48	202	65	1,889
Claims granted	4,525	3,457	1,602	1,006	751	635	11,976
Transfers from other States	549	444	153	207	103	92	1,548
Existing 30th June, 1921 ..	39,037	30,385	13,019	9,887	5,101	5,085	102,514
	44,111	34,286	14,774	11,100	5,955	5,812	116,038
Deduct —							
Deaths	2,780	2,292	911	723	293	348	7,347
Cancellations and transfers to other States ..	1,266	1,036	385	363	346	199	3,595
	4,046	3,328	1,296	1,086	639	547	10,942
Old-age Pensions existing on 30th June, 1922 ..	40,065	30,958	13,478	10,014	5,316	5,265	105,096

(ii) *Sexes of Pensioners.*—Of the 105,096 persons in receipt of pensions at 30th June, 1922, 41,430 (or 39 per cent.) were males, and 63,666 (or 61 per cent.) were females. Details for the several States are as follows:—

OLD-AGE PENSIONS.—SEXES OF PENSIONERS, 1922.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales	16,498	23,567	40,065	70.00
Victoria	11,607	19,351	30,958	59.98
Queensland	5,668	7,810	13,478	72.57
South Australia	3,626	6,388	10,014	56.76
Western Australia	2,169	3,147	5,316	68.92
Tasmania	1,862	3,403	5,265	54.72
Total	41,430	63,666	105,096	65.07

(a) Number of males to each 100 females.

(iii) *Ages and Conjugal Condition of Pensioners.* The recorded ages of the 11,976 persons to whom pensions were granted during the year 1921-22 varied considerably, ranging from 2,291 at age 60 to one at age 97. Particulars for quinquennial age-groups are as follows :—

**OLD-AGE PENSIONS.—AGES AND CONJUGAL CONDITION OF PENSIONERS,
1922.**

Age Groups.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
60-64 ..	170	346	124	640	465	2,060	1,885	4,410	5,050
65-69 ..	821	1,990	756	3,567	104	581	422	1,107	4,674
70-74 ..	206	542	269	1,017	41	194	231	466	1,483
75-79 ..	71	141	113	325	21	47	116	184	509
80-84 ..	19	43	38	100	9	14	63	86	186
85-89 ..	4	11	22	37	2	1	20	23	60
90 and above ..	1	..	5	6	..	..	8	8	14
Total ..	1,292	3,073	1,327	5,692	642	2,897	2,745	6,284	11,976

3. Invalid Pensions.—(i) Summary, 1922. Details as at 30th June, 1922, are given hereunder :—

INVALID PENSIONS.—SUMMARY, 1922.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
Claims examined during year ending 30th June, 1922 ..	2,900	2,025	1,128	462	783	413	7,711
Claims rejected	1,011	474	365	114	394	171	2,529
Claims granted	1,889	1,551	763	348	389	242	5,182
Transfers from other States ..	171	74	48	49	32	19	393
Existing 30th June, 1921 ..	15,387	11,174	4,960	2,433	1,923	2,023	37,900
	17,447	12,799	5,771	2,830	2,344	2,284	43,475
Deduct—							
Deaths	859	772	330	202	157	134	2,454
Cancellation and Transfers to other States ..	691	583	289	129	165	145	2,002
	1,550	1,355	619	331	322	279	4,456
Invalid Pensions existing 30th June, 1922	15,897	11,444	5,152	2,499	2,022	2,005	39,019

(ii) *Sexes of Pensioners.* Of the 39,019 persons in receipt of invalid pensions on 30th June, 1922, 18,047, or 46 per cent., were males, and 20,972, or 54 per cent., were females. Details for the several States are as follows :—

INVALID PENSIONS.—SEXES OF PENSIONERS, 1922.

State.	Males.	Females.	Total.	(a) Masculinity.
New South Wales	7,166	8,731	15,897	82.08
Victoria	5,447	5,997	11,444	90.83
Queensland	2,571	2,581	5,152	99.61
South Australia	914	1,585	2,499	57.67
Western Australia	1,064	958	2,022	111.06
Tasmania	885	1,120	2,005	79.00
Total	18,047	20,972	39,019	86.05

(a) Number of males to each 100 females.

(iii) *Ages and Conjugal Condition of Pensioners, 1922.* The recorded ages of the 5,182 persons who received invalid pensions in the period under review varied from 16 to 81. The following table gives particulars for those up to age 20, and in decennial age-groups after age 20 :—

INVALID PENSIONS.—AGES AND CONJUGAL CONDITION OF PENSIONERS, 1922.

Age Groups.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
16-19 ..	187	..	..	187	229	..	..	229	416
20-29 ..	201	43	1	245	294	30	3	327	572
30-39 ..	126	243	4	373	165	98	58	321	694
40-49 ..	126	366	40	532	145	135	149	429	961
50-59 ..	262	562	102	926	178	345	408	931	1,857
60-69 ..	123	248	66	437	29	69	84	182	619
70-79 ..	10	20	8	38	5	6	10	21	59
80 and over ..	1	1	1	3	..	..	1	1	4
Total ..	1,036	1,483	222	2,741	1,045	683	713	2,441	5,182

4. *Cost of Administration.*—Under the State regime the cost of administration differed considerably in the several States, and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1921-22 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £93,608, or about 1.7 per cent. of the amount actually paid in pensions. Details concerning the cost of administration for 1921-22 are as follows :—

OLD-AGE AND INVALID PENSIONS.—COST OF ADMINISTRATION, 1921-22.

Heading.	Amount.
	£
Salaries	34,631
Temporary assistance	2,078
Commission to Postmaster-General's Department, at 12s. 6d. per £100 paid	33,978
Postage and telegrams	5,208
Other expenses	17,713
Total	93,608

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1921–22, apart from the cost of administration, was £5,290,056.

5. **Summary, 1918 to 1922.**—The following table gives detailed statistical information concerning the working of the Act for the last five years :—

OLD-AGE AND INVALID PENSIONS.—SUMMARY, AUSTRALIA, 1918 TO 1922.

Financial Year ended 30th June—	Number of Pensioners.			Amount Paid in Pensions.	Amount Paid to Asylums for Maintenance of Pensioners.	Total Payment to Pensioners and Asylums.	Cost of Administration.	Cost of Administration per £100 paid to Pensioners and Asylums.	Average Fortnightly Pension on last day of Financial Year.
	Old-age.	Invalid.	Total.						
				£	£	£	£	£ s. d.	s. d.
1918	95,387	29,912	125,299	3,753,977	39,060	3,793,037	54,355	1 8 8	24 3
1919	95,969	31,999	127,968	3,880,865	55,750	3,936,615	63,280	1 12 2	24 2
1920	99,170	35,231	134,401	4,411,629	72,675	4,484,304	74,120	1 13 1	29 1
1921	102,415	37,981	140,396	5,074,336	75,905	5,150,241	88,271	1 14 3	28 9
1922	105,096	39,019	144,115	5,290,056	89,978	5,380,034	93,608	1 14 10	28 9

§ 7. Maternity Allowance.

During the session of 1912 the Federal Parliament passed an Act (assented to on 10th October, 1912) providing under certain circumstances for the payment of maternity allowances. The scope and main provisions of the Act are given in Year Book No. 14, p. 1047. The most important conditions were that the sum of five pounds is payable in the case of each confinement resulting in the birth of a viable child whether such child was born alive or dead. The mother must be a native of the Commonwealth, or intending to settle permanently therein. No payment is made in the case of an aboriginal or an Asiatic.

The following table gives a summary in connexion with the working of the Maternity Allowance Act for the years 1918 to 1922 :—

MATERNITY ALLOWANCE.—SUMMARY, 1918 TO 1922.

Year ended 30th June—	Claims Paid.	Claims Rejected.	Amount Paid.	Cost of Administration.	Cost per £100 of allowance paid.
			£	£	£ s. d.
1918	126,885	404	634,425	12,250	1 18 7
1919	124,016	510	620,080	11,369	1 16 8
1920	125,173	621	625,865	12,785	2 0 10
1921	140,152	622	700,760	16,173	2 6 2
1922	138,140	520	690,700	15,441	2 4 9

§ 8. War Pensions.

1. **General.**—An Act for the provision of war pensions was passed in 1914 and amended in 1915 and 1916. Its scope can be determined by the following extract from section 3. “ Upon the death or incapacity of any member of the forces whose death or incapacity results, or has resulted, from his employment in connexion with warlike operations in which His Majesty is, or has since the commencement of the present state of war been engaged, the Commonwealth shall, subject to this Act, be liable to pay to the member or his dependents, or both, as the case may be, pensions in accordance with this Act.” Full details as to rates of pension, etc., are given in the chapter “ Defence.”

2. **Number of Pensioners, 1922.**—The following table shows the number of pensioners and the places where payments were made at the 30th June, 1922 :—

WAR PENSIONS.—NUMBER OF PENSIONERS, 1922.

Where Paid.	Incapacitated Members of the Forces.	Dependents of—		Total.
		Deceased Members.	Incapacitated Members.	
London	1,552	4,788	3,119	9,459
South Africa	53	48	59	160
New Zealand	279	277	229	785
Other Overseas	26	8	13	47
New South Wales	24,971	12,936	29,951	67,858
Victoria	25,141	14,766	35,757	75,664
Queensland	8,778	4,210	10,794	23,782
South Australia	4,254	4,078	5,878	14,210
Western Australia	7,989	4,121	11,451	23,561
Tasmania	3,206	2,018	4,622	9,846
Total	76,249	47,250	101,873	225,372

3. **Expenditure on War Pensions, 1922.**—The expenditure on war pensions for the year ended 30th June, 1922, is given in the table hereunder :—

WAR PENSIONS.—EXPENDITURE, 1921-22.

Where Paid.	Amount.	Where Paid.	Amount.
	£		£
New South Wales	2,294,258	Tasmania	296,952
Victoria	2,153,780	London and elsewhere	328,883
Queensland	775,998		
South Australia	444,552		
Western Australia	733,956	Total	7,028,379

4. **Cost of Administration.**—The cost of administration in 1921-22 was £170,209, made up as follows :—

WAR PENSIONS.—COST OF ADMINISTRATION, 1921-22.

Items.	Total.
	£
Salaries	62,105
Temporary assistance	18,431
Medical examinations	14,297
Services of Registrars, Police, and Postal Officials	43,569
London Office	9,393
Miscellaneous	22,414
Total	170,209

B. STATE FINANCE.

§ 1. General.

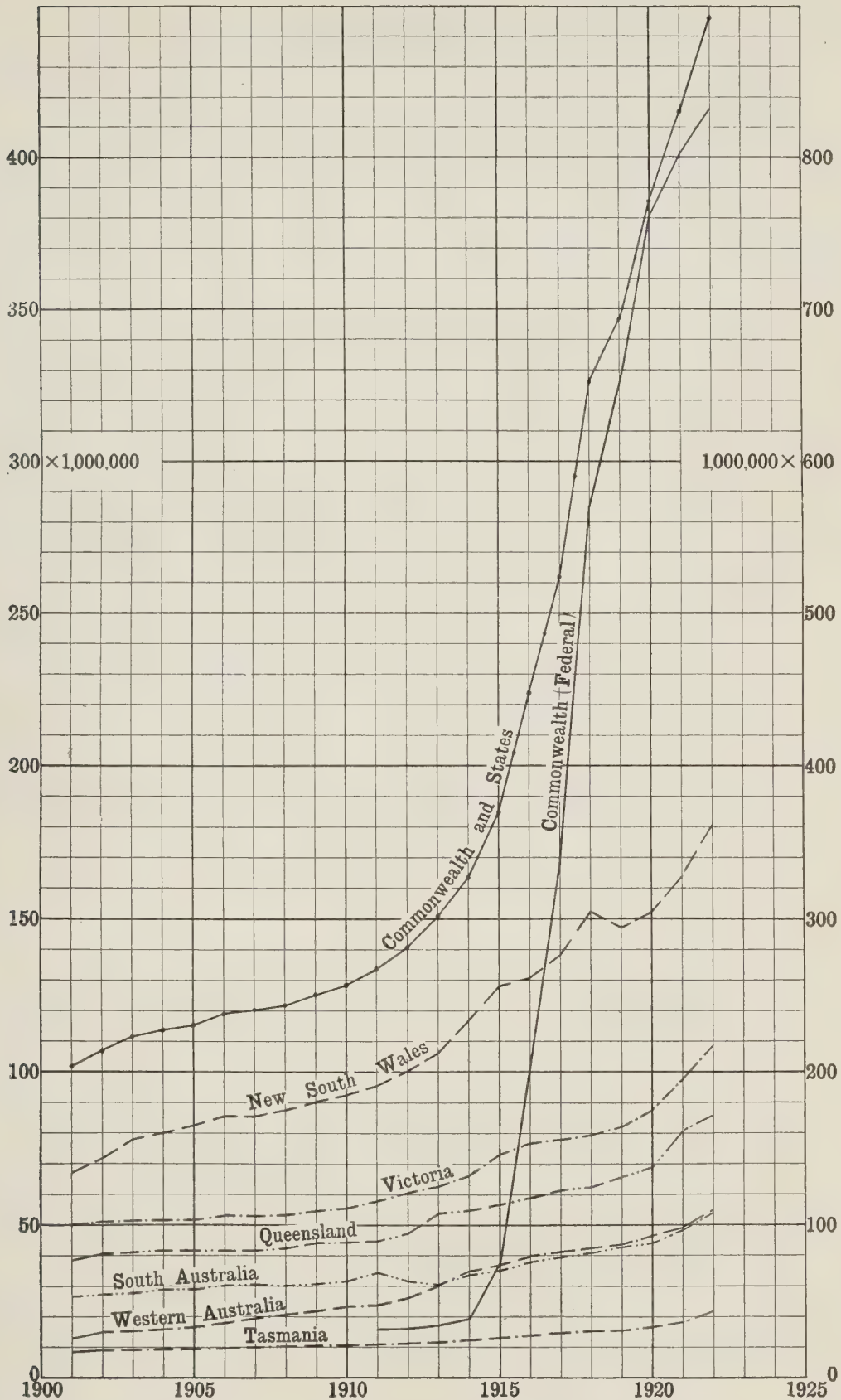
1. **Functions of State Governments.**—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, while parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand, or of healthy and vigorous progress and good economy on the other.

Similarly, as regards revenue, imposts which in some States are levied by the Central Government, are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this chapter should be read in connexion with those contained in the chapter dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which in other countries are often left to private enterprise.

2. **Accounts of State Governments.**—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings banks funds, sinking funds, insurance companies deposits, etc. The Loan Funds are debited with all loan moneys raised by the State, and credited with the expenditure therefrom for public works or other purposes.

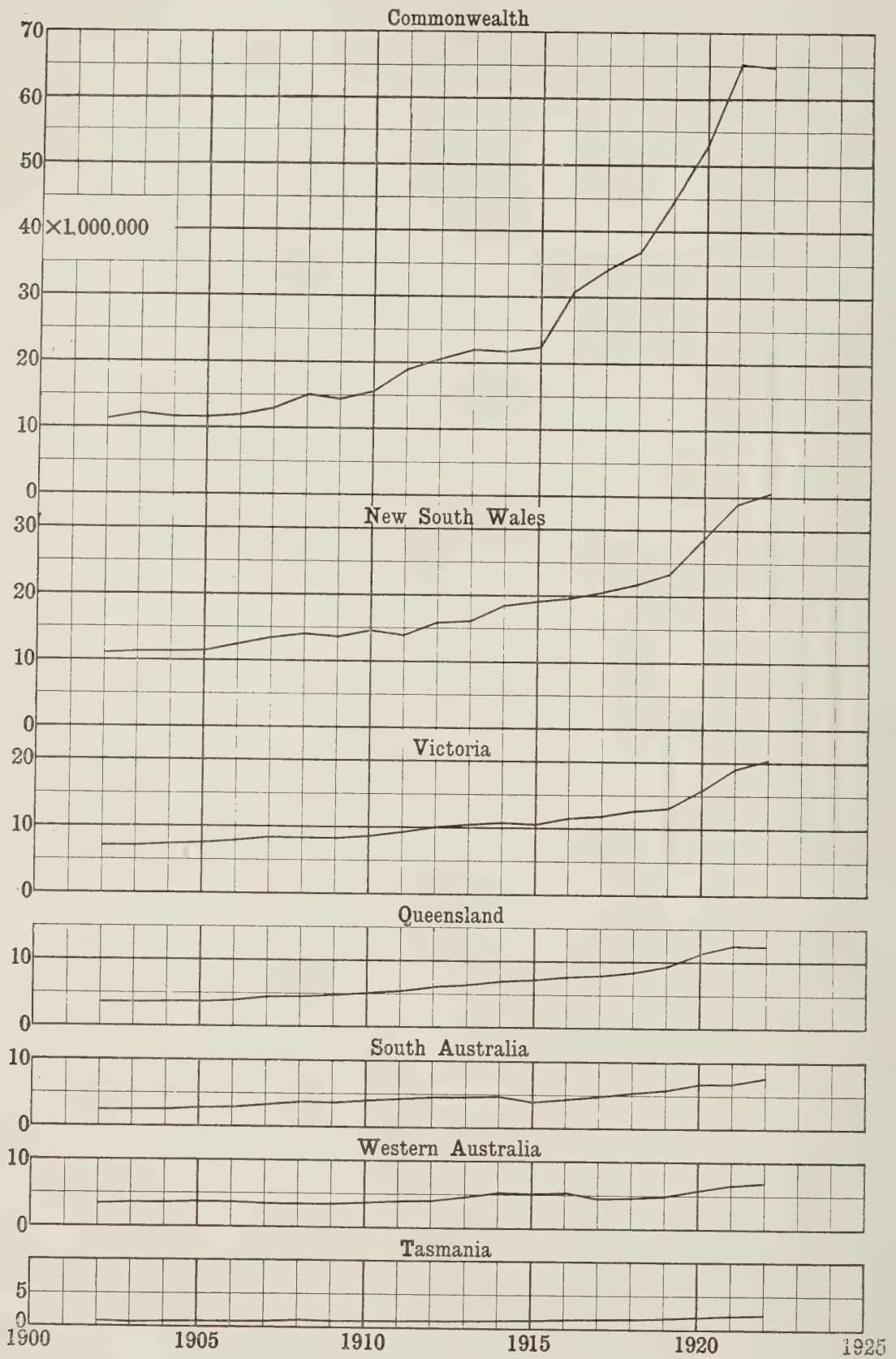
3. **Inter-relation of Commonwealth and State Finance.**—The principal alteration in State finance brought about by Federation has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments, and have been relieved of the expenditure connected with these and the Defence Departments, while, in their place, a new item of State revenue has been introduced, viz., the payment to the States of a Commonwealth subsidy. With regard to this, an important development in the financial relations of the Commonwealth and State Governments was discussed at the Premiers' Conference of May, 1923, and will be treated in detail in the Appendix. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate. No action has, however, been taken, although the subject has, on more than one occasion, been under discussion.

PUBLIC DEBT—COMMONWEALTH AND STATES, 1901 TO 1922.



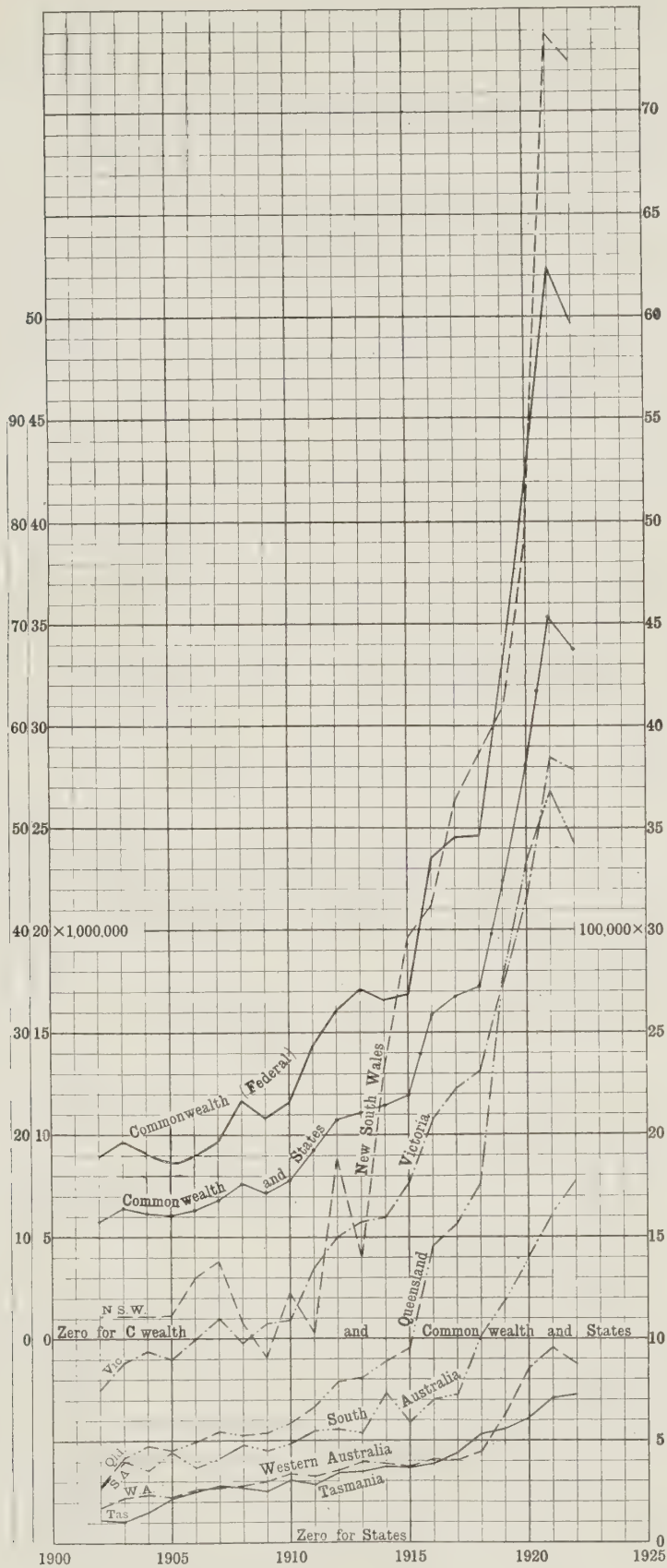
EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents £10,000,000 in the case of the Commonwealth (Federal) and States Debts, the scale for which is on the left hand side, and £20,000,000 for Commonwealth and States combined, the scale for which is on the right hand. The Commonwealth (Federal) debt commenced in the year 1911.

CONSOLIDATED REVENUE—COMMONWEALTH AND STATES, 1902 TO 1922.



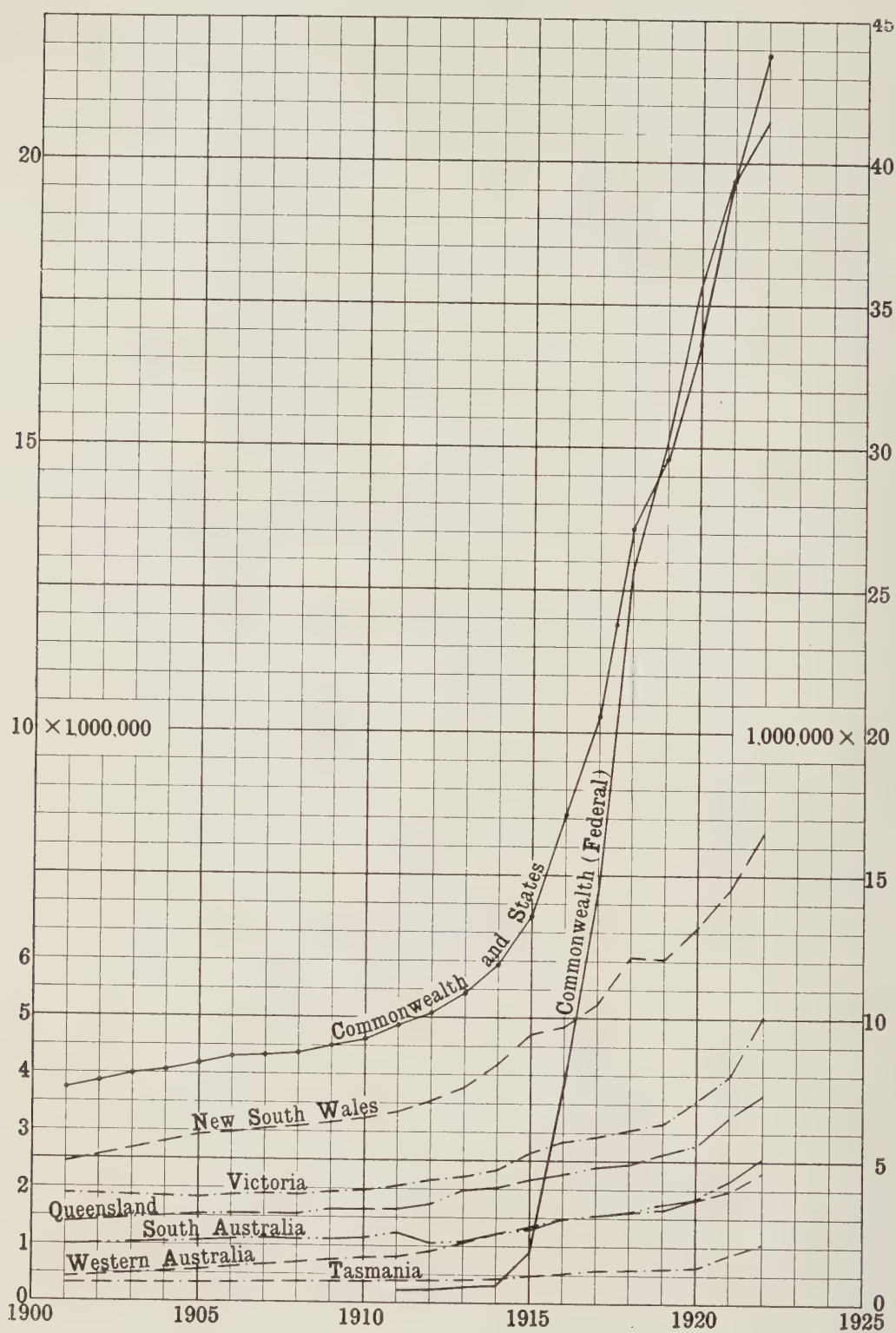
EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents £5,000,000. The zero lines in each case are marked thus "0."

TAXATION.—COMMONWEALTH AND STATES, 1902 TO 1922.



EXPLANATION.—The base of each small square represents an interval of one year. Of the two scales on the left hand, the outer one is that for the Commonwealth and States combined, the vertical height of each square representing £2,000,000, and the inner one that for the Commonwealth (Federal), the vertical height representing £1,000,000. The scale on the right hand is that for the States and the vertical height of each small square represents £100,000.

INTEREST ON PUBLIC DEBTS.—COMMONWEALTH AND STATES, 1901 TO 1922.



EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents £500,000 in the case of the Commonwealth (Federal) and States, the scale for which is on the left hand side, and £1,000,000 in the case of the Commonwealth and States combined, for which the scale is on the right hand side.

§ 2. State Consolidated Revenue Funds.

Division I.—Revenue.

1. **General.**—The principal sources of State revenue are :—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The Commonwealth subsidy.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources, that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes Taxation, followed in order by the Commonwealth Subsidy and Land Revenue.

2. **Revenue Received.**—The following table furnishes particulars of the total amounts and the amounts per head of consolidated revenue received by the several States during the five years 1917–18 to 1921–22 :—

STATE CONSOLIDATED REVENUE, 1917–18 TO 1921–22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
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TOTAL COLLECTIONS.

	£	£	£	£	£	£	£
1917–18	21,577,229	12,672,787	8,491,482	5,526,226	4,622,536	1,503,047	54,393,307
1918–19	23,448,166	13,044,088	9,415,543	5,798,313	4,944,850	1,581,884	58,232,944
1919–20	28,650,496	15,866,184	11,293,743	6,582,788	5,863,501	1,815,031	70,071,743
1920–21	34,031,396	19,054,475	12,601,031	7,151,366	6,789,565	2,105,449	81,733,282
1921–22	35,637,820	20,357,733	12,311,378	7,771,752	6,907,107	2,181,395	85,167,185

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917–18	11 4 10	8 18 10	12 7 0	12 7 4	15 1 8	7 11 9	10 18 4
1918–19	11 19 1	9 1 6	13 6 11	12 13 4	15 19 3	7 15 11	11 9 2
1919–20	14 1 2	10 11 1	15 6 3	13 13 4	17 18 2	8 12 11	13 4 2
1920–21	16 5 6	12 9 4	16 15 0	14 11 2	20 10 6	9 17 10	15 2 0
1921–22	16 15 1	13 2 6	15 19 9	15 9 3	20 12 2	9 19 9	15 9 1

The figures given in this table relate in each instance to the financial year ended 30th June.

During the five years from 30th June, 1918, to 30th June, 1922, the aggregate revenue of the States increased by no less a sum than £30,773,878, or nearly 60 per cent. Increases were in evidence in all the States, the largest being that of £14,060,591 in New South Wales. This general advance is the more notable since, during recent years, a much smaller amount has been received from the Commonwealth in the way of subsidy, than was the case up to 1910.

During the period there has been a marked increase in the State revenue collections per head in all the States. Western Australia throughout the period has occupied the premier position, and in 1921–22 the revenue per head in that State exceeded the average for Australia by about 33 per cent.

(iii) *Revenue from Taxation.*—(a) *General.* Prior to the inauguration of Federation, duties of Customs and Excise constituted the principal source of revenue from taxation. At the present time, the most productive form of State taxation is the income tax, which is now imposed in all the States. For 1921–22 stamp duties occupied second place. In addition to these, a State land tax and licence fees of various kinds are now collected in all the States, while a dividend tax is levied in Western Australia. The total revenue from taxation collected by the States during the year 1921–22 was £17,847,923, details of which are set forth in the table hereunder:—

STATE CONSOLIDATED REVENUE FROM TAXATION, 1921–22.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Probate and succession duties	907,307	706,181	295,748	197,764	76,817	61,142	2,244,959
Other stamp duties ..	1,343,389	932,649	308,991	346,918	164,929	144,125	3,241,001
Land Tax ..	2,490	372,060	480,518	162,104	42,549	97,031	1,156,752
Income Tax ..	4,077,897	1,443,209	2,194,361	975,043	497,879	355,035	9,543,424
Licences ..	228,585	320,127	87,287	38,829	41,193	15,932	781,953
Other Taxation ..	689,349	16,948	53,391	57,918	57,792	54,436	929,834
Total ..	7,249,017	3,791,174	3,420,296	1,778,576	881,159	727,701	17,847,923

(a) Includes £177,005 Dividend Tax.

The total amount raised by means of taxation by the several State Governments during the five years 1917–18 to 1921–22 is given in the following table:—

STATE CONSOLIDATED REVENUE FROM TAXATION, 1917–18 TO 1921–22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL.							
	£	£	£	£	£	£	£
1917–18	3,860,501	2,310,723	1,761,232	1,016,887	449,457	533,383	9,932,183
1918–19	4,083,990	2,744,946	2,772,269	1,185,451	629,061	555,537	11,971,254
1919–20	4,962,518	3,159,767	3,323,745	1,391,830	844,197	609,576	14,291,633
1920–21	7,388,133	3,846,833	3,682,642	1,622,076	955,359	708,603	18,203,646
1921–22	7,249,017	3,791,174	3,420,296	1,778,576	881,159	727,701	17,847,923

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917–18	2 0 3	1 12 7	2 11 3	2 5 6	1 9 4	2 13 10	1 19 10
1918–19	2 1 8	1 18 2	3 18 7	2 11 10	2 0 7	2 14 8	2 7 1
1919–20	2 8 8	2 2 0	4 10 1	2 17 10	2 11 7	2 18 1	2 13 11
1920–21	3 10 8	2 10 4	4 17 11	3 6 0	2 17 9	3 6 7	3 7 3
1921–22	3 8 2	2 8 11	4 8 10	3 10 9	2 12 7	3 6 8	3 4 10

During the period between 30th June, 1913, and 30th June, 1922, the aggregate State revenue from taxation increased about 80 per cent, the increase varying considerably in the several States. The remarkable increase of recent years in New South Wales is due principally to the broadening of the basis of the State Income Tax, and increased receipts from Stamp Duties, while in 1921–22, £547,577 was collected from Racing Taxes. Queensland substantially increased the income tax in 1918–19, while Tasmania imposed in 1917–18 a super-tax on incomes and a tax on motor vehicles. The State taxation for the year 1921–22 showed a slight decline from the previous year, owing mainly to diminished collections in New South Wales and Queensland.

Taking the States as a whole, the State taxation increased by 24s. 11d. per head during the period from 1917–18 to 1921–22, the most marked increase occurring in the case of Queensland. Most of the advance took place in the last three years, and was chiefly due to increases in the Land and Income Taxes.

(b) *Probate and Succession Duties.* Probate duties have been levied for a considerable time in all the States, but the provisions of the several State Acts governing the payment

of duty differ widely both in regard to the ordinary rates and those which apply to special beneficiaries. A table showing the values of the estates in the various States in which probates and letters of administration were granted is given hereinafter. (See Private Finance § 8.)

The duties collected in the several States for the financial years 1917-18 to 1921-22 are as follows:—

STATE PROBATE AND SUCCESSION DUTIES.—COLLECTIONS, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	677,433	575,875	1,062,533	734,352	907,307
Victoria	506,662	718,194	881,423	702,468	706,181
Queensland	121,986	(a)	(a)	328,204	295,748
South Australia	170,185	221,729	192,540	158,107	197,764
Western Australia	38,710	40,329	121,951	42,407	76,817
Tasmania	50,688	64,410	50,271	53,407	61,142
Total	1,565,664	1,620,537 (b)	2,308,718 (b)	2,018,945	2,244,959

(a) Included in Stamp Duties.

(b) Excluding Queensland.

(c) *Other Stamp Duties.* The revenue derived by the several States from stamp duties (exclusive of probate and succession duties) for the years 1917-18 to 1921-22 is shown in the accompanying table:—

STATE STAMP DUTIES.—COLLECTIONS, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	616,180	687,304	978,343	1,414,468	1,343,389
Victoria	507,573	583,818	822,489	930,221	932,649
Queensland	205,674	a387,742	a698,382	332,559	308,991
South Australia	179,521	213,130	325,034	370,288	346,918
Western Australia	80,720	112,104	173,541	177,404	164,929
Tasmania	96,215	96,949	128,574	148,893	144,125
Total	1,685,883	2,081,047a	3,126,363a	3,373,833	3,241,001

(a) Including Queensland probate and succession duties.

(d) *Land Tax.* All the States impose a Land Tax, although Queensland, the last State to fall into line, only collected its first levy in 1915-16. In the other States the impost is of long standing.

The following table shows the amount collected by means of such taxes during the financial years 1917-18 to 1921-22:—

STATE LAND TAX.—COLLECTIONS, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
New South Wales	2,921	2,800	2,834	2,717	2,490
Victoria	353,156	324,232	314,217	331,756	372,060
Queensland	344,547	578,253	459,188	469,175	480,518
South Australia	165,469	154,621	146,336	168,020	162,104
Western Australia	63,388	34,182	46,415	57,791	42,549
Tasmania	84,701	86,705	87,785	89,085	97,031
Total	1,014,182	1,180,793	1,056,775	1,118,544	1,156,752

(e) *Income Tax.* A duty on the income of persons, whether it be derived from personal exertion or from property, is also imposed in all the States. As might be expected, the rates, exemptions, etc., are widely divergent in the different States, but the general principles of the several Acts are similar. The Dividend Duties Act of Western Australia supplied to a certain extent the place of an income tax in that State in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax was found necessary.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1917-18 to 1921-22. In the case of Western Australia the amount of dividend duty collected is included.

STATE INCOME AND DIVIDEND TAXES.—COLLECTIONS, 1917-18 TO 1921-22.

State.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
		£	£	£	£	£
New South Wales	..	2,182,117	2,355,243	2,308,267	4,399,360	4,077,897
Victoria	..	773,468	928,210	915,551	1,591,198	1,443,209
Queensland	..	967,420	1,677,335	2,023,316	2,410,171	2,194,361
South Australia	..	452,303	542,007	662,384	852,001	975,043
Western Australia	..	207,963	359,623	416,136	579,289	497,879
Tasmania	..	259,869	261,028	279,476	348,005	355,035
Total	..	4,843,140	6,123,446	6,605,130	10,180,024	9,543,424

(f) *Commonwealth and State Taxation.* For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of Australia by the central governing authorities, it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars concerning the total taxation for each of the years 1917-18 to 1921-22, as well as the amount per head of population:—

TOTAL COMMONWEALTH AND STATE TAXATION, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Commonwealth taxation	24,606,743	32,864,486	41,847,692	52,427,421	49,678,842
State taxation ..	9,932,183	11,971,254	14,291,633	18,203,646	17,847,923
Total ..	34,538,926	44,835,740	56,139,325	70,631,067	67,526,765
Taxation per head ..	£6/18/7	£8/16/6	£10/11/9	£13/1/0	£12/5/1

Whilst the Commonwealth taxation increased during the period by £25,072,099, the State taxation advanced by £7,915,740, the aggregate increase being £32,987,839. The amount *per capita* of total taxation has increased about 80 per cent in the period under review.

(iv) *Public Works and Services.* A very large proportion of the revenue of all the States is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all States. For the year 1921-22 the aggregate revenue from these sources totalled £49,228,828, or nearly 58 per cent. of

the revenue from all sources. Details of revenue from public works and services for the year 1921–22 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways	19,145,082	10,751,173	5,125,340	3,326,074	3,054,258	597,162	41,999,089
Harbour services ..	1,134,023	156,747	53,455	463,207	173,187	..	1,980,619
Public batteries ..	..	421	..	..	57,663	..	58,084
Water supply and sewerage ..	1,760,123	(a)319,063	..	389,845	406,151	..	2,875,182
Other public services ..	618,272	691,382	154,634	372,640	202,032	276,894	2,315,854
Total	22,657,500	11,918,786	5,333,429	4,551,766	3,893,291	874,056	49,228,828

(a) Water supply only.

(v) *Lands.* The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses, and as a matter of financial procedure is open to adverse criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1921–22.

STATE LAND REVENUE, 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Sales ..	1,130,777	195,951	408,117	139,291	338,729	42,587	2,255,452
Rentals ..	878,043	237,271	1,140,946	146,469	96,459	49,402	2,548,590
Total ..	2,008,820	433,222	1,549,063	285,760	435,188	91,989	4,804,042

(vi) *Commonwealth Subsidy.* The payments to the States of Commonwealth subsidy represent in each instance a considerable proportion of the States' revenue, and for the year 1921–22 aggregated £7,033,985. This represents a great decline from the amounts received up to 1910, and is the result of the altered system of allotting the subsidy. The percentage represented by the subsidy received by each State for 1921–22 on the total revenue of that State is shown in the following table:—

COMMONWEALTH SUBSIDY PAID TO EACH STATE, 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy	2,632,036	1,918,967	951,178	621,862	554,704	(a)355,238	7,033,985
Total revenue ..	35,637,820	20,357,733	12,311,378	7,771,752	6,907,107	2,181,395	85,167,185
Percentage of subsidy on revenue	% 7.38	% 9.44	% 7.73	% 8.00	% 8.03	% 16.28	% 8.26

(a) Including special grant of 85,000.

The amount of subsidy here shown is that for which the several States took credit during the year 1921–22.

(vii) *Miscellaneous.* In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1921–22 aggregated £6,252,407. Of this amount, interest was responsible for £3,092,184.

Division II.—Expenditure.

1. **General.**—The principal heads of State expenditure from Consolidated Revenue Funds are :—

- (a) Interest and sinking funds in connexion with public debt.
- (b) Working expenses of railways and tramways.
- (c) Justice.
- (d) Police.
- (e) Penal establishments.
- (f) Education.
- (g) Medical and charitable expenditure.
- (h) All other expenditure.

Of these items, that of working expenses of railways and tramways was the most important, and for the year 1921–22 represented about 38 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the item of interest and sinking fund in connexion with the public debt, then education, medical and charitable expenditure, and police, in the order named.

2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States, and the expenditure per head of population during each of the years 1917–18 to 1921–22 are given in the table hereunder :—

STATE EXPENDITURE.*—CONSOLIDATED REVENUE FUNDS, 1917–18 TO 1921–22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
	£	£	£	£	£	£	£
1917–18	21,553,405	12,631,169	8,900,934	5,500,419	5,328,279	1,459,748	55,373,954
1918–19	23,233,398	13,023,407	9,587,532	5,876,811	5,596,864	1,644,512	58,962,524
1919–20	30,210,013	15,752,459	11,266,910	6,457,039	6,531,725	1,828,301	72,046,447
1920–21	34,476,892	18,941,698	12,591,201	7,543,640	7,476,291	2,189,157	83,218,879
1921–22	36,966,525	20,297,279	12,499,970	7,826,241	7,639,242	2,302,077	87,531,334

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917–18	11 4 7	8 18 3	12 18 11	12 6 2	17 7 8	7 7 4	11 2 3
1918–19	11 16 11	9 1 2	13 11 10	12 16 9	18 0 10	8 2 0	11 12 1
1919–20	14 16 5	10 9 7	15 5 6	13 8 2	19 19 0	8 14 2	13 11 8
1920–21	16 9 9	12 7 11	16 14 9	15 7 2	22 12 0	10 5 8	15 7 6
1921–22	17 7 6	13 1 9	16 4 8	15 11 5	22 15 10	10 10 10	15 17 8

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June.

3. Details of Expenditure for 1921-22.—(i) *General.* The following table shows the total expenditure and expenditure per head of the several States under each of the principal items :—

STATE EXPENDITURE.—DETAILS, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
TOTAL.							
	£	£	£	£	£	£	£
Public debt (interest, sinking fund, etc.) ..	7,107,699	4,982,389	3,286,096	2,222,230	2,444,263	735,862	20,778,539
Railways and tramways (working expenses) ..	14,588,001	8,117,070	4,808,362	2,512,596	2,553,124	548,510	33,127,663
Justice	549,353	227,303	153,384	52,967	78,077	20,273	1,081,357
Police	1,059,323	586,437	458,955	210,577	178,005	78,721	2,572,018
Penal establishments ..	120,317	74,161	36,236	33,423	26,088	10,097	300,322
Education	3,727,453	1,940,440	1,300,589	596,493	571,926	277,721	8,414,622
Medical and charitable ..	1,847,745	927,113	983,932	378,075	362,495	161,185	4,660,545
All other expenditure ..	7,966,634	3,442,366	1,472,416	1,819,880	1,425,264	469,708	16,596,268
Total ..	36,966,525	20,297,279	12,499,970	7,826,241	7,639,242	2,302,077	87,531,334

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt (interest, sinking fund, etc.) ..	3 6 10	3 4 3	4 5 4	4 8 5	7 5 10	3 7 5	3 15 5
Railways and tramways (working expenses) ..	6 17 2	5 4 8	6 4 11	5 0 0	7 12 4	2 10 3	6 0 3
Justice	0 5 2	0 2 11	0 4 0	0 2 1	0 4 8	0 1 10	0 3 11
Police	0 10 0	0 7 7	0 11 11	0 8 5	0 10 7	0 7 3	0 9 4
Penal establishments ..	0 1 1	0 1 0	0 0 11	0 1 4	0 1 6	0 0 11	0 1 1
Education	1 15 0	1 5 0	1 13 9	1 3 9	1 14 2	1 5 5	1 10 6
Medical and charitable ..	0 17 4	0 11 11	1 5 7	0 15 0	1 1 8	0 14 9	0 16 11
All other expenditure ..	3 14 11	2 4 5	1 18 3	3 12 5	4 5 1	2 3 0	3 0 3
Total ..	17 7 6	13 1 9	16 4 8	15 11 5	22 15 10	10 10 10	15 17 8

(ii) *Relative Importance of Various Items.* The relative importance of the items of expenditure enumerated above varies considerably in the several States, and the following table gives, therefore, for each State the percentage of the expenditure under the various items on the total expenditure for the State :—

STATE EXPENDITURE.—PERCENTAGES OF ITEMS, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Public debt (interest, sinking fund, etc.)	19.23	24.55	26.29	28.39	32.00	31.97	23.74
Railways and tramways (working expenses)	39.46	39.99	38.47	32.11	33.42	23.83	37.85
Justice	1.49	1.12	1.23	0.68	1.02	0.88	1.24
Police	2.87	2.89	3.67	2.69	2.33	3.42	2.94
Penal establishments	0.32	0.36	0.29	0.43	0.34	0.44	0.34
Education	10.08	9.56	10.40	7.62	7.49	12.06	9.61
Medical and charitable	5.00	4.57	7.87	4.83	4.75	7.00	5.32
All other expenditure	21.55	16.96	11.78	23.25	18.65	20.40	18.96
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways represented for the year 1921-22 about 60 per cent. of the aggregate State expenditure, a proportion which has been maintained with great regularity for many years past.

Division III.—Balances.

1. **Position on 30th June, 1922.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequent deficit being usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. Thus, during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly, and the situation has changed very much for the worse in recent years, so that no State has now a credit balance. The position of the balances of the several Consolidated Revenue Funds on 30th June, 1922, was as follows :—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1922.

State.				Debit Balance.		Net Debit Balance.
				Cash Overdraft.	Overdraft liquidated by Treasury Bills.	
				£	£	£
New South Wales	..	..	..	3,578,263	..	3,578,263
Victoria	..	..	..	76,966	1,128,286	1,205,252
Queensland	..	..	..	625,032	..	625,032
South Australia	..	..	..	1,544,412	..	1,544,412
Western Australia	..	..	..	..	..	5,505,565
Tasmania	..	..	..	349,401	..	349,401
Total	..	..	..	..	..	12,807,925

§ 3. State Trust Funds.

1. **Nature.**—In addition to the moneys received by the several State Governments as revenue and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. In most of the States also, sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits help to swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., also find a place. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be liquidated in this manner is open to question.

2. **Extent of Funds.**—The amount of trust funds held by the several State Governments on 30th June, 1922, was as follows :—

STATE TRUST FUNDS, 30th JUNE, 1922.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	17,491,833	12,860,388	782,997	2,042,262	17,013,496	1,390,561	51,581,537

§ 4. State Loan Funds.

Division I.— Loan Expenditure.

1. General.—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5¼d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which in other countries are usually entrusted to local authorities or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connexion with improvements to harbours and rivers, as well as the construction of works for the purposes of water supply and sewerage, have materially increased the amounts which it has been considered expedient to obtain by means of loans. The State loan expenditure and public debt thus differ very materially from those of most European countries, and also from those of the Commonwealth, where such expenditure was very largely incurred for purposes of defence, or absorbed in the prosecution of war. The State debts consist chiefly of moneys raised and expended with the object of assisting the development of the resources of the country, and are, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. Loan Expenditure, 1921–22.—During the year ended 30th June, 1922, the actual expenditure of the States from loan funds amounted to £32,089,006, Victoria with a total of £11,804,991 being the principal contributor to this amount. The expenditure on railways and tramways is a very heavy item, but a factor in the large expenditure in recent years is the settlement of returned soldiers upon the land. Details for the year for each State are given in the following table :—

STATE LOAN EXPENDITURE, 1921–22.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ..	4,789,517	3,478,021	1,226,280	572,482	419,131	490,990	10,976,421
Water supply and sewerage	2,744,691	968,048	159,475	1,194,894	217,578	..	5,284,686
Harbours, rivers, etc. }	997,469	964,163	..	823,491	104,225	132,879	3,022,227
Roads and bridges }							
Public buildings ..	135,299	284,556	173,090	90,828	44,440	90,933	819,146
Development of mines, etc.	..	(a) 185	..	..	43,529	..	43,344
Advances to settlers ..	(a) 1,073,967	21,569	..	11,697	} 747,442	..	..
Land purchases for settle- ment ..	1,500,000	4,431,854	459,201	(a) 50,105		170,357	6,218,048
Loans to local bodies ..	2,225	(b)	428,347	..	64,492	87,406	582,470
Rabbit-proof fences ..	6,307	(b)	1,507	(a) 18,977	..	..	(a) 11,163
Other public works and pur- poses ..	1,341,191	1,656,965	151,673	65,112	814,087	1,124,799	5,153,827
Total	10,442,732	11,804,991	2,599,573	2,689,422	2,454,924	2,097,364	32,089,006

(a) Repayment. Electricity supply. (b) Included in "Advances to Settlers." (c) Including £1,520,451 for (d) Including £812,638 spent on Hydro-Electric scheme.

3. **Loan Expenditure, 1917-18 to 1921-22.**—The following table gives particulars relative to the loan expenditure of the several States during each of the years 1917-18 to 1921-22 :—

STATE LOAN EXPENDITURE, 1917-18 TO 1921-22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
	£	£	£	£	£	£	£
1917-18	4,487,511	1,931,679	1,828,320	1,586,766	1,054,177	518,929	11,407,382
1918-19	3,918,887	2,932,521	2,736,412	2,006,166	1,049,736	575,054	13,218,776
1919-20	8,794,905	7,601,266	4,797,865	3,446,617	2,663,319	1,375,960	28,679,932
1920-21	14,701,028	11,095,158	4,251,248	1,826,841	2,586,404	2,717,452	37,178,131
1921-22	10,442,732	11,804,991	2,599,573	2,689,422	2,454,924	2,097,364	32,089,006
PER HEAD OF POPULATION.							
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917-18	2 6 9	1 7 3	2 13 2	3 11 0	3 8 9	2 12 5	2 5 9
1918-19	2 0 0	2 0 10	3 17 7	4 7 8	3 7 9	2 16 8	2 12 0
1919-20	4 6 4	5 1 2	6 11 0	7 3 2	8 2 8	6 11 1	5 11 11
1920-21	7 0 7	7 5 2	5 13 0	3 14 4	7 16 4	12 5 11	6 17 4
1921-22	4 18 2	7 12 3	3 7 6	5 7 0	7 6 6	9 12 1	5 16 6

Throughout the period under review the loan expenditure of New South Wales has represented on the average between 30 and 40 per cent. of the aggregate for all the States.

The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the five years under review in Tasmania in 1920-21 with £12 5s. 11d. per head, and its lowest in Victoria in 1917-18 with 27s. 3d. per head.

4. **Total Loan Expenditure to 30th June, 1922.**—(i) *General.* The total loan expenditure of the States from the initiation of the borrowing system to the 30th June, 1922, has amounted to no less a sum than £490,303,050. The manner in which this sum has been spent in the several States is furnished in the following table :—

TOTAL STATE LOAN EXPENDITURE TO 30th JUNE, 1922.

Heads of Expenditure.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways	101,850,635	61,696,443	45,759,771	22,024,414	186,77,354	6,342,055	256,350,672
Telegraphs and telephones	1,761,845	..	996,587	991,773	..	..	3,750,205
Water supply and sewerage	33,604,892	15,034,440	1,721,324	13,001,408	5,410,132	..	68,772,196
Harbours, rivers, etc.	20,363,606	5,421,612	3,351,026	6,859,224	4,448,631	5,328,254	45,772,353
Roads and bridges	1,457,536	149,323	363,084	291,615	..	128,224	2,389,782
Defence	6,324,800	2,809,486	2,775,462	1,764,741	898,639	1,454,924	16,028,052
Public buildings	569,930	..	2,763,070	..	420,819	235,000	3,988,819
Immigration	..	510,453	..	5,111	1,864,833	..	2,380,397
Development of mines, etc.	..	..	..	..	..	..	..
Land purchases for settlement	5,747,000	23,000,053	2,521,986	1,942,109	7,900,801	2,892,075	48,062,802
Advances to settlers	674,332	1,053,932	..	2,240,371	..	90,143	..
Loans to local bodies	(a) 10,573	..	7,283,778	..	64,492	1,338,791	8,676,488
Rabbit-proof fences	128,724	..	..	202,317	328,703	..	659,744
Other public works and purposes	9,246,977	8,542,957	2,474,452	3,742,882	5,455,475	4,008,797	33,471,540
Total	181,719,704	118,218,699	70,010,540	53,065,965	45,469,879	21,818,263	490,303,050

(a) Repayment.

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence.

On the other hand, in the public debt statement, loans repaid are excluded, but in the case of loans still outstanding each is shown according to the amount repayable at maturity, not according to the amount originally available for expenditure.

(ii) *Relative Importance of Items.* The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States. The following table gives for each State the percentage of each item on the total loan expenditure of that State to 30th June, 1922 :—

TOTAL STATE LOAN EXPENDITURE TO 30th JUNE, 1922.—PERCENTAGES OF ITEMS.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ..	56.05	52.19	65.36	41.50	41.08	29.07	52.30
Telegraphs and telephones	0.97	..	1.42	1.87	..	..	0.76
Water supply and sewerage	18.49	12.72	2.46	24.50	11.90	..	14.02
Harbours, rivers, etc.	11.21	4.59	4.79	12.93	9.78	24.42	9.33
Roads and bridges	..	..	..	..	..	..	..
Defence	0.80	0.13	0.52	0.55	..	0.59	0.49
Public buildings ..	3.48	2.38	3.96	3.33	1.98	6.67	3.27
Immigration	0.31	..	3.95	..	0.92	1.08	0.81
Development of mines, etc.	..	0.43	..	0.01	4.10	..	0.49
Advances to settlers ..	0.37	0.88	..	4.22	..	0.41	..
Land purchases for settle- ment	3.16	19.45	3.60	3.66	17.38	13.25	9.80
Loans to local bodies ..	..	..	10.41	..	0.14	6.13	1.77
Rabbit-proof fences ..	0.07	..	..	0.38	0.72	..	0.13
Other public works and pur- poses	5.09	7.23	3.53	7.05	12.00	18.38	6.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Division II.—State Public Debts.

1. *General.*—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. *Total State Debts, 1918 to 1922.*—The table hereunder shows the indebtedness of the several States, and the amounts owing per head of population at the 30th June, in each year from 1918 to 1922 inclusive.

STATE PUBLIC DEBTS, 30th JUNE, 1918 TO 1922.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
TOTAL.							
30th June, 1918 ..	£ 152,584,693	£ 79,595,646	£ 62,296,986	£ 40,621,480	£ 42,304,001	£ 15,137,355	£ 392,540,161
„ 1919 ..	147,174,536	82,031,929	65,581,121	42,650,206	43,637,076	15,281,281	396,356,149
„ 1920 ..	152,776,082	87,647,739	69,680,764	43,753,146	46,822,003	16,630,084	417,309,772
„ 1921 ..	164,336,492	97,317,831	80,382,052	48,556,552	49,039,667	18,776,306	458,408,900
„ 1922 ..	180,796,323	109,099,199	85,691,228	54,388,688	54,959,778	21,945,411	506,880,627
PER HEAD OF POPULATION.							
30th June, 1918 ..	£ s. d. 78 11 7	£ s. d. 55 17 9	£ s. d. 89 2 5	£ s. d. 89 19 4	£ s. d. 137 8 7	£ s. d. 76 7 0	£ s. d. 76 12 0
„ 1919 ..	73 12 3	55 13 8	90 10 0	91 0 10	136 11 4	74 10 6	74 16 8
„ 1920 ..	73 18 2	57 19 1	93 4 4	89 17 8	142 1 7	79 0 5	76 9 0
„ 1921 ..	78 4 1	63 7 2	104 8 1	97 11 11	147 4 3	88 11 6	81 11 11
„ 1922 ..	84 3 8	69 9 3	109 2 0	107 13 9	161 17 8	102 16 9	91 0 8

The State in which the greatest increase in indebtedness was experienced is Victoria, which added £29,503,553 during the period under review. There was an apparent decline in the Public Debt of New South Wales in 1918-19. This was due to the fact that the debt in 1917-18 included stock raised in February, 1918, for the redemption of loans maturing in September, 1918.

3. Nature of Securities.—(i) *For each State, 1922.* All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London County and Westminster Bank. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually a short-term debenture having a currency varying from about six months to five years. The bonds are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a long-dated loan on the market. The amount of the public debt of the several States held in each of these forms of security is given in the table hereunder :—

STATE PUBLIC DEBTS.—SECURITIES, 30th JUNE, 1922.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales	18,668,516	154,268,607	7,859,200	..	180,796,323
Victoria ..	40,527,969	67,442,945	..	1,128,285	109,099,199
Queensland ..	24,961,017	55,074,395	..	254,900	(a) 85,691,228
South Australia	..	47,185,913	7,202,775	..	54,388,688
Western Australia	1,280,910	40,837,171	5,456,875	2,994,905	(b) 54,959,778
Tasmania ..	2,166,175	18,779,236	1,000,000	..	21,945,411
Total ..	87,604,587	383,588,267	21,518,850	4,378,090	(a),(b) 506,880,627

(a) Including £5,400,916 advance from Commonwealth Government.

(b) Including £4,389,917 advance from Commonwealth Government.

(ii) *Totals, all States, 1918 to 1922.* The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past four years will be seen from the following table :—

STATE PUBLIC DEBTS.—SECURITIES, 1917-18 TO 1921-22.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1918 ..	63,616,822	296,459,069	28,468,060	3,996,210	392,540,161
" 1919 ..	70,928,892	289,785,322	28,961,760	5,626,140	(a) 396,356,149
" 1920 ..	72,244,575	308,896,687	28,202,945	4,146,790	(b) 417,309,772
" 1921 ..	75,343,413	341,337,602	27,509,290	5,399,050	(c) 458,408,900
" 1922 ..	87,604,587	383,588,267	21,518,850	4,378,090	(d) 506,880,627

(a) Including £1,054,035 not represented by securities.

(b) Including £3,818,775 " " "

(c) Including £8,819,545 " " "

(d) Including £9,790,833 " " "

During the period between 30th June, 1918, and 30th June, 1922, the public debt of the States increased by £114,340,466, or at the rate of about £28,500,000 per annum.

4. **Place of Flotation of Loans.**—(i) *For each State.* The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. It may be noted also that certain loans have been placed in New York on account of the Queensland and Tasmanian Governments. The following table gives particulars of loans outstanding on 30th June, 1922, which had been floated abroad and in Australia respectively :—

STATE PUBLIC DEBTS.—PLACE OF FLOTATION OF LOANS, 30th JUNE, 1922.

State.	Floated Abroad.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales ..	118,396,120	65.49	62,400,203	34.51	180,796,323
Victoria ..	42,708,244	39.15	66,390,955	60.85	109,099,199
Queensland ..	58,904,114	68.39	26,787,114	31.61	85,691,228
South Australia ..	28,645,466	52.67	25,743,222	47.33	54,388,688
Western Australia ..	37,158,653	67.61	17,801,125	32.39	54,959,778
Tasmania ..	11,733,373	53.47	10,212,038	46.53	21,945,411
Total ..	297,545,970	58.70	209,334,657	41.30	506,880,627

(ii) *Total, All States.* The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1917–18 to 1921–22, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years :—

STATE PUBLIC DEBTS.—PLACE OF FLOTATION OF LOANS, 30th JUNE, 1918 TO 1922.

State.	Floated Abroad.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	£	£	%	£
30th June, 1918 ..	261,107,683	66.52	131,432,478	33.48	392,540,161
„ 1919 ..	258,200,003	65.14	138,156,146	34.86	396,356,149
„ 1920 ..	263,412,174	63.12	153,897,598	36.88	417,309,772
„ 1921 ..	270,077,970	58.92	188,330,930	41.08	458,408,900
„ 1922 ..	297,545,970	58.70	209,334,657	41.30	506,880,627

In the course of four years the foreign indebtedness of the States has increased by £36,438,287, while the local indebtedness has increased by £77,902,179. In other words, the Australian proportion had on 30th June, 1922, grown to more than two-fifths.

The local indebtedness of the States increased during the year 1921-22 by over £48,000,000. This is accounted for chiefly by the loans from the Commonwealth Government, which has either advanced money to the States outright, or acted as agent for the States in obtaining loans from London. The money so obtained has been largely spent in settling returned soldiers on the land, in constructing silos for wheat storage, and in providing employment through the medium of local bodies.

5. Rates of Interest.—(i) *At 30th June, 1922.* As mentioned above, the highest rate of interest paid in connexion with the earliest State public loans was fivepence farthing per £100 per diem, or, approximately, 8 per cent. per annum. At the present time, the rates of interest on State debts vary from $7\frac{1}{2}$ per cent. to 3 per cent. It is probable, however, that the amount of outstanding debt at the higher rates will increase materially in the future, since conversion can scarcely be effected at present at a lower rate of interest than 5 per cent. The average rate payable on the aggregate indebtedness of the States is about $4\frac{1}{2}$ per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of Tasmania, the difference between these two average rates being about $\frac{1}{2}\frac{1}{4}$ per cent. The table hereunder gives particulars of the rates of interest payable on the public debt of the States at the 30th June, 1922 :—

STATE PUBLIC DEBTS.—RATES OF INTEREST PAYABLE, 30th JUNE, 1922.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
%	£	£	£	£	£	£	£
$7\frac{1}{2}$ ..	..	..	..	..	..	122,123	122,123
$7\frac{1}{4}$ ..	..	582,814	..	..	..	228,314	811,128
7 ..	..	..	2,466,091	..	..	..	2,466,091
£6/15/2 ..	..	631,248	..	..	..	..	631,248
$6\frac{1}{2}$..	6,500,000	..	3,129,650	3,000,000	80,000	3,439,986	16,149,636
£6/7/- ..	..	5,523,543	..	..	..	..	5,523,543
£6/6/4 ..	..	..	..	..	4,054,917	..	4,054,917
$6\frac{1}{4}$ ..	..	8,487,655	..	..	..	1,064,194	9,551,849
6 ..	10,000,000	1,272,351	4,520,676	9,151,813	3,916,880	1,769,210	30,630,930
$5\frac{3}{4}$..	24,880,240	5,096,833	..	..	1,500,000	87,976	31,565,049
$5\frac{1}{2}$..	19,338,961	20,028,367	4,201,000	10,663,967	3,112,197	917,476	58,261,968
£5/6/11 ..	250,000	3,563,724	..	..	..	600,000	4,413,724
£5/5/3 ..	500,000	1,603,998	..	..	..	348,588	2,452,586
$5\frac{1}{4}$..	15,298,829	3,062,860	1,275,000	881,100	1,435,000	669,000	22,621,789
5 ..	7,342,932	3,073,442	327,100	4,229,128	2,515,045	1,167,618	18,655,265
$4\frac{7}{8}$ ..	..	1,000,000	..	..	..	..	1,000,000
$4\frac{3}{4}$ ..	..	1,648,160	..	500,000	..	..	2,148,160
$4\frac{1}{2}$ ..	..	2,980,575	15,339,516	900,234	2,239,513	417,088	30,083,460
$4\frac{1}{4}$..	8,206,534	696,260	..	..	..	140,750	837,010
$4\frac{1}{8}$..	7,400,000	3,900,000	..	2,600,000	3,100,000	1,000,000	18,000,000
$4\frac{1}{16}$..	28,572,127	9,317,447	21,104,036	7,070,993	11,688,736	4,690,018	82,443,357
4 ..	3,056,610	779,683	2,025,300	3,866,410	1,650,000	400	11,378,403
$3\frac{3}{4}$..	32,392,471	26,116,165	21,287,660	5,597,761	12,317,490	4,832,670	102,544,217
$3\frac{1}{2}$..	17,047,073	9,729,474	5,489,383	5,927,282	7,350,000	450,000	45,993,212
3 ..	..	..	..	..	..	..	..
Overdue, not yet fixed and various ..	10,546	4,600	4,525,816	..	..	..	4,540,962
Total ..	180,796,323	109,099,199	85,691,228	54,388,688	54,959,778	21,945,411	506,880,627
Average rate	£4/12/2	£4/13/3	£4/6/6	£4/14/2	£4/6/-	£4/15/3	£4/11/2

(ii) *All States, 1918 to 1922.* The rapid increase in recent years in the amount of Australian Government securities bearing interest at the higher rates is clearly shown in the table hereunder, which gives particulars concerning the aggregate amount of indebtedness at the several rates of interest on 30th June in each of the years 1918 to 1922 :—

STATE PUBLIC DEBTS.—RATES OF INTEREST PAYABLE 30th JUNE, 1918 TO 1922.

Rate of Interest.	30th June, 1918.	30th June, 1919.	30th June, 1920.	30th June, 1921.	30th June, 1922.
%	£	£	£	£	£
7½ .. .. .	..	..	..	100,090	122,123
7¼ .. .. .	..	..	..	..	811,128
7 .. .. .	..	..	..	1,000,000	2,466,091
£6/15/2 .. .. .	..	..	..	..	631,248
6½ .. .. .	..	..	..	11,972,379	16,149,636
£6/7/- .. .. .	..	..	..	..	5,523,543
£6/6/4 .. .. .	..	..	..	..	4,054,917
6¼ .. .. .	..	..	..	11,172,803	9,551,849
6	1,900	..	2,241,800	9,726,038	30,630,930
5¾	13,076,000	16,076,000	19,576,000	20,171,776	31,565,049
5½	10,180,000	20,924,002	35,333,489	47,234,718	58,261,968
£5/6/11 .. .. .	..	..	..	4,413,724	4,413,724
£5/5/3 .. .. .	..	..	..	2,452,586	2,452,586
5¼	6,695,400	8,462,694	25,220,443	22,851,697	22,621,789
5	17,582,034	18,100,129	20,692,892	18,404,652	18,655,265
4¾ .. .. .	..	7,158,860	7,368,597	6,582,390	1,000,000
4½ .. .. .	..	..	..	..	2,148,160
4¼	37,746,932	33,557,543	28,277,650	27,154,832	30,083,460
4	400,000	350,000	..	..	..
4	801,000	646,250	640,750	837,010	837,010
4	18,000,000	18,000,000	18,000,000	18,000,000	18,000,000
4	93,220,106	92,321,823	87,383,636	83,983,630	82,443,357
3¾	24,376,838	23,834,798	12,654,252	12,019,854	11,378,403
3½	124,075,299	110,222,724	109,989,876	109,871,906	102,544,217
3¼	24,718	24,718	24,718	..	..
3	46,351,684	46,415,173	46,245,134	46,188,230	45,993,212
Overdue, etc.	8,250	261,435	3,660,535	4,270,585	4,540,962
Total	392,540,161	396,356,149	417,309,772	458,408,900	506,880,627
Average rate	£3/18/6	£4/0/3	£4/3/4	£4/7/2	£4/11/2

The increase of the average rate of interest started in 1912, but was accelerated by the war, which has virtually made 5 per cent. the present minimum rate of interest for gilt-edged securities. The average rate is likely to rise for some considerable time, since securities falling due in the immediate future will, in all likelihood, have to be renewed at a higher rate of interest.

6. **Interest per Head.**—The relative burden of the State debts in respect of interest payments will be seen from the following table, which gives for the 30th June, 1922, the amount of interest paid during the financial year ending at that date, and also the corresponding amount per head of population:—

STATE PUBLIC DEBTS.—INTEREST PAID DURING 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest paid	7,081,938	4,469,678	(a) 3,286,096	2,072,610	2,156,311	632,637	19,699,270
Annual interest paid per head	£3/6/7	£2/17/8	£4/5/4	£4/2/6	£6/8/8	£2/17/11	£3/11/6

(a) Inclusive of flotation expenses.

7. **Dates of Maturity.**—An important point of difference between the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, and such a well-known form of security as British Consols, is that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, there being only a few exceptions which are included in the following table under the headings “interminable” and “indefinite.” The “indefinite” includes amounts which are payable by the respective Governments after giving a specified notice, and also certain amounts owing to the Commonwealth Government. In most cases the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money-market at the date of maturity has an important bearing on the success or

otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have adopted the practice of specifying a period prior to the date of maturity within which the Government, on giving twelve, or in some cases six months' notice, has the option of redeeming the loan. The Government can, therefore, take advantage of opportunities that may offer during the period for favourable renewals. Particulars concerning the due dates of the State loans outstanding on 30th June, 1922, are given in the following table.

Those loans in the case of which the Government has the option of redemption during a specified period have been in each instance classified according to the latest date of maturity.

**STATE PUBLIC DEBTS.—DUE DATES OF AMOUNT OUTSTANDING
ON 30th JUNE, 1922.**

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue	10,546	1,000	900	..	..	..	12,446
1922	7,037,400	7,875,630	1,397,562	1,405,347	1,541,610	481,905	19,739,454
1923	9,310,712	22,075,454	122,562	3,377,617	1,349,365	740,021	36,975,731
1924	29,771,644	8,729,667	13,298,196	5,560,848	1,344,135	705,344	59,409,834
1925	4,007,494	14,350,986	12,143,562	6,677,669	..	1,843,312	39,023,023
1926	6,802,841	5,927,797	935,862	2,562,738	1,922,305	578,910	18,730,453
1927	11,800,026	2,248,200	4,926,312	2,620,116	5,555,500	1,361,731	28,511,885
1928	5,286,000	997,325	609,662	1,068,748	..	776,789	8,738,524
1929	169,040	1,058,861	215,662	611,131	..	954,798	3,009,492
1930	3,268,170	1,944,800	4,554,262	302,675	..	87,438	10,157,345
1931	1,370,116	326,990	122,562	450	..	159,380	1,979,498
1932	13,076,000	933,700	122,562	1,225	1,168,995	21,133	15,323,615
1933	9,686,300	..	122,562	368,912	716,708	20,831	10,915,313
1934	3,000,000	3,000,000	122,562	1,043,421	1,866,318	21,134	9,053,435
1935	17,500,000	..	122,562	1,478,499	8,408,185	164,718	27,673,964
1936 .. ..	..	300,000	3,047,212	4,250,380	1,240,000	28,837	8,866,429
1937 .. ..	..	..	122,562	15,586	..	32,202	170,350
1938 .. ..	..	..	210,469	92,383	552,640	24,678	880,170
1939 .. ..	..	..	122,562	2,569,499	106,603	25,655	2,824,319
1940	16,500,000	4,248,900	2,122,562	6,014,860	4,500,000	7,848,719	41,235,041
1941 .. ..	..	324,380	3,050,953	..	..	52,347	3,427,680
1942 .. ..	..	485,100	137,562	..	61,697	28,824	713,183
1943 .. ..	..	3,600	122,562	..	..	29,968	156,130
1944 .. ..	..	400	122,562	..	..	31,156	154,118
1945 .. ..	..	..	6,351,352	..	2,000,000	32,390	8,383,742
1946 .. ..	..	1,620,412	122,562	..	..	283,675	2,026,649
1947 .. ..	..	..	6,676,331	..	2,080,000	35,010	8,791,341
1948 .. ..	..	..	122,562	..	..	28,708	151,270
1949 .. ..	..	11,699,371	122,562	..	..	28,396	11,850,329
1950	12,250,000	..	7,069,162	..	..	2,829,469	22,148,631
1951 .. ..	..	..	1,122,162	..	..	30,584	1,152,746
1952 .. ..	..	..	247,962	..	..	31,740	279,702
1953 .. ..	..	..	2,270,371	..	..	32,460	2,302,831
1954 .. ..	..	123,874	122,562	..	..	17,195	263,631
1955 .. ..	..	..	122,562	..	4,437,000	17,803	4,577,365
1956 .. ..	..	..	122,562	..	..	12,249	134,811
1957 .. ..	..	..	122,562	..	..	..	122,562
1958 .. ..	..	..	122,562	..	..	..	122,562
1959 .. ..	..	..	122,562	..	..	..	122,562
1960 .. ..	..	2,979,700	2,122,562	3,000,000	1,000,000	..	9,102,262
1961 .. ..	..	..	122,562	..	..	..	122,562
1962	10,500,000	..	122,562	..	6,000,000	..	16,622,562
1963 .. ..	..	..	122,562	..	..	..	122,562
1964 .. ..	..	..	122,562	..	1,566,000	..	1,688,562
1965 .. ..	..	..	122,562	..	..	..	122,562
1966 .. ..	..	..	122,562	..	..	..	122,562
1967 .. ..	..	..	122,562	..	..	..	122,562
1968 .. ..	..	..	122,562	..	..	..	122,562
1969 .. ..	..	..	122,562	..	..	..	122,562
1970 .. ..	..	..	2,122,562	..	..	..	2,122,562
1971 .. ..	..	..	122,562	..	..	..	122,562
1972 .. ..	..	..	122,562	..	..	..	122,562
1973 .. ..	..	..	122,562	..	..	..	122,562
1974 .. ..	..	..	122,562	..	..	..	122,562
1975 .. ..	..	..	122,562	..	..	..	122,562
1976 .. ..	..	..	122,564	..	..	..	122,564
Interminable ..	532,890	..	..	..	..	..	532,890
Annual drawings ..	..	..	..	..	52,800	..	52,800
Indefinite	18,917,144	17,843,052	6,890,916	11,366,584	7,489,917	2,545,902	65,053,515
	180,796,323	109,099,199	85,691,228	54,388,688	54,959,778	21,945,411	506,880,627

8. **Sinking Funds.**—The practice of providing for the ultimate extinction of the public debt by means of sinking funds receiving definite annual contributions from Consolidated Revenue and accumulating at compound interest has been consistently adopted only in the case of Western Australia. This State has established, in connexion with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. The funds are placed in the hands of trustees in London, by whom they are invested in securities, and applied from time to time to the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. The following table gives particulars of the sinking funds of each State, and the net indebtedness after allowances for sinking fund has been made, the details given being those for 30th June, 1922 :—

STATE SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1922.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per Head.
	£	£	£	£
New South Wales ..	180,796,323	417,067	180,379,256	83 19 9
Victoria ..	109,099,199	2,754,540	106,344,659	67 14 2
Queensland ..	85,691,228	393,615	85,297,613	108 11 4
South Australia ..	54,388,688	1,263,448	53,125,240	105 3 8
Western Australia ..	54,959,778	8,370,160	46,589,618	137 4 6
Tasmania ..	21,945,411	948,376	20,997,035	98 7 10
Total ..	506,880,627	14,147,206	492,733,421	88 9 11

§ 6. Commonwealth and State Public Debts.

With the object of setting out the entire liability of the Australian public, the Commonwealth and State debts have been brought together into one statement in the appended table. It will be noticed that there is a column headed “deduction for debts counted twice.” This includes transferred properties for every year, and certain advances made by the Commonwealth to the States.

COMMONWEALTH AND STATE PUBLIC DEBTS, 1917-18 TO 1921-22.

Year ended 30th June.	Public Debt of Commonwealth.	Public Debt. of States.	Total Debt.	Deduction for Debts Counted Twice.	Balance, i.e., Public Debt of Australia.	Public Debt per Capita.
	£	£	£	£	£	£
1918..	284,055,069	392,540,161	676,595,230	23,202,515	653,392,715	131 2 7
1919..	325,770,747	396,356,149	722,126,896	27,952,619	694,174,277	136 12 1
1920..	381,309,905	417,309,772	798,619,677	28,190,462	770,429,215	145 4 10
1921..	401,720,024	458,408,900	860,128,924	29,787,088	830,341,836	153 8 4
1922..	416,070,509	506,880,627	922,951,136	29,528,297	893,422,839	160 9 2

A series of graphs illustrating the rise in the revenue, public debt, and taxation of the Commonwealth and States since 1902, the year 1901-2 being the first complete financial year since Federation, accompanies this chapter.

C. PRIVATE FINANCE.

§ 1. Coinage.

1. **Australian Mints.**—(i) *General.* Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855. The Melbourne branch was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment in return for which the mint receipts are paid into the respective State Treasuries, and it might be said until recently that, apart from expenditure on buildings, new machinery, etc., the accounts paid into the Treasuries fairly balanced the mint subsidies. Early in 1923, however, it was announced that owing to losses incurred in the operations of recent years, the New South Wales Government had decided to close the Sydney branch at the end of 1923.

(ii) *Gold Receipts and Issues in 1922.* (a) *Assay of Deposits Received.* The deposits received during 1922 at the Sydney Mint reached a gross weight of 113,625 ozs.; at the Melbourne Mint, a gross weight of 145,894 ozs.; and at the Perth Mint, a gross weight of 691,868 ozs. The average composition of these deposits in Sydney was, gold 924.3, silver 56.7, base 19.0 in every 1,000 parts; Melbourne, gold 829.0, silver 122.0, base 49.0 in every 1,000 parts; and Perth, gold 786, silver 155.6, base 58.4 in every 1,000 parts.

(b) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking a considerable quantity of gold cast into 10-oz. bars. During the last three years the export has been carried on under the strict regulation of the Commonwealth Government. The issues during 1922 are shown in the table below:—

AUSTRALIAN MINTS.—ISSUES OF GOLD, 1922.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ..	578,000	..	578,000	43,568	621,568
Melbourne ..	608,306	..	608,306	91,521	699,827
Perth ..	2,298,884	..	2,298,884	4,201	2,303,085
Total ..	3,485,190	..	3,485,190	139,290	3,624,480

(c) *Withdrawals of Worn Gold Coin.* The mints receive light and worn Imperial coin for recoinage, gold being coined locally, while silver is forwarded to London. The total withdrawals of worn gold coin were as follows:—Sydney, £1,084,381; Melbourne, £751,781 (since and including 1890); Perth, £1,401.

(iii) *Total Gold Receipts and Issues.* (a) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 40,190,817.05 ozs.; Melbourne, 39,508,963.16 ozs.; and Perth, 28,930,701 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11⁵/₁₁d. per oz. fine (24 carats), it is possible to arrive at an estimate of the number of fine ounces from the amounts paid for the gold received. These amounts were:—Sydney, £148,904,096; Melbourne, £154,824,835; Perth, £100,834,209; corresponding to—Sydney, 35,055,046 ozs. fine; Melbourne, 36,448,864 ozs. fine; and Perth, 23,738,391 ozs. fine. In the case of deposits containing over a certain minimum of silver, the excess is paid for at the rate fixed from time to time by the Deputy-Master of the branch mint concerned.

(b) *Issues.* The total values of gold coin and bullion issued by the three mints are shown in the table hereafter. It may be said that about four-sevenths of the total gold production of Australasia has passed through the three Australian mints, the production of Australia to the end of 1922 being valued at £612,858,161, and that of New Zealand at approximately £92,000,000, or a total of about £705,000,000.

AUSTRALIAN MINTS.—TOTAL ISSUES OF GOLD TO END OF 1922.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ..	136,962,500	4,781,000	141,743,500	7,130,320	148,873,820
Melbourne ..	141,675,943	946,780	142,622,723	12,188,367	154,811,090
Perth ..	92,231,642	367,338	92,598,980	8,196,080	100,795,060
Total ..	370,870,085	6,095,118	376,965,203	27,514,767	404,479,970

(iv) *Silver and Bronze Coinage.* (a) *Prices of Silver.* The value of silver has greatly decreased since its demonetization and restricted coinage in almost the whole of Europe. A noticeable increase, however, took place for some years after 1915, the price of silver following the general trend of world prices. Its average price in the London market in recent years is shown in the table in Chapter XXI. Mineral Industry.

(b) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth on the average about £1 14s. 5d. during 1922, the difference represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. Negotiations took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, and in 1898, resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No immediate steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a Federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage. Since 1916 silver and bronze coins have been minted in Australia on behalf of the Commonwealth Treasury.

(c) *Silver and Bronze Issues.* The total issues of silver and bronze coinage on account of the Commonwealth since 1910 as obtained from returns furnished by the Treasury, are set out in the following table:—

AUSTRALIAN MINTS.—SILVER AND BRONZE ISSUES, 1910 TO 1922.

Year.	Silver.					Bronze.		
	2/-	1/-	6d.	3d.	Total.	1d.	½d.	Total.
	£	£	£	£	£	£	£	£
1910-17 ..	1,464,600	1,024,300	264,500	253,675	3,007,075	83,520	37,220	120,740
1918 ..	266,350	114,300	39,200	41,425	461,275	8,700	5,730	14,430
1919 ..	98,600	48,900	28,500	37,725	213,725	29,204	9,930	39,134
1920 ..	94,800	93,000	54,800	53,775	296,375	33,320	8,555	41,875
1921 ..	118,300	58,400	72,500	82,900	332,100	30,779	10,525	41,304
1922 ..	129,100	37,400	40,400	40,650	247,550	31,770	4,400	36,170
Total ..	2,171,750	1,376,300	499,900	510,150	4,558,100	217,293	76,360	293,653

(d) *Withdrawals of Worn Silver Coin.* The value of worn silver coins received during 1922 was as follows:—Sydney, £131,800; Melbourne, £107,937; Perth, *nil*. The total withdrawals of worn silver coin were:—Sydney, £1,007,072; Melbourne, £728,455; Perth, £60,619.

(v) *Standard Weight and Fineness of Coinage.* The coinage of Australia, so far as the coins minted are concerned, is the same as that of the United Kingdom, and the same provisions as to legal tender apply, viz., gold coins are legal tender to any amount, silver for an amount not exceeding forty shillings, and bronze up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

AUSTRALIAN COINAGE—STANDARD WEIGHT AND FINENESS.

Denomination.	Standard Weight.	Standard Fineness.
	Grains.	
GOLD—		
Sovereign ..	123.27447	} Eleven-twelfths fine gold, viz. :— Gold .. 0.91667 } 1.00000 Alloy .. 0.08333
Half-sovereign ..	61.63723	
SILVER—		
Florin ..	174.54545	} Thirty-seven-fortieths fine silver, viz. :— Silver .. 0.925 } 1.000(a) Alloy .. 0.075
Shilling ..	87.27272	
Sixpence ..	43.63636	
Threepence ..	21.81818	
BRONZE—		
Penny ..	145.83333	} Mixed metal, viz. :— Copper .. 0.95 } 1.00 Tin .. 0.04 Zinc .. 0.01
Halfpenny ..	87.50000	

(a) The fineness of Australian silver coins is still 925, but since December, 1920, the fineness of British silver coins has been reduced to 500.

§ 2. Cheque-Paying Banks.

1. *Banking Legislation.*—(i) *Commonwealth Legislation.* Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to “Banking, other than State banking, also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money.” Legislation under this authority comprises the following Acts: No. 27 of 1909, dealing with Bills of Exchange, Cheques, and Promissory Notes; No. 11 of 1910, dealing with Australian Notes; and No. 14 of 1910, a Bank Notes Tax Act. The Notes Act and the Bank Notes Tax Act were supplemented in the following year by the passing of No. 18 of 1911, “An Act to provide for a Commonwealth Bank,” which passed both Houses and was assented to on 22nd December, 1911. Some account of the foundation of the Bank appeared in No. 6 to No. 10 issues of the Official Year Book.

As the initial expenses of the bank were heavy, the early operations resulted in a small loss, but with the increasing prosperity of the institution the early deficit was gradually reduced, until on 30th June, 1915, it was entirely extinguished. The following table shows the aggregate net profits from the initiation of the bank to the end of each of the last five financial years :—

COMMONWEALTH BANK.—AGGREGATE PROFITS, 1918 TO 1922.

Date.	Aggregate Net Profits to Date.		
	General Bank.	Savings Bank.	Total.
	£	£	£
30th June, 1918	991,934	84,092	1,076,026
„ 1919	1,726,532	196,438	1,922,970
„ 1920	2,426,067	330,038	2,756,105
„ 1921	3,082,249	369,116	3,451,365
„ 1922	3,577,317	424,342	4,001,659

According to the provisions of section 30 of the Bank Act, the net profit of £4,001,659 accumulated at 30th June, 1922, was divided equally between a bank reserve fund and a redemption fund. The reserve fund is available for the payment of any liabilities of the bank. The redemption fund is available for the repayment of any money advanced to the Bank by the Treasurer, or for the redemption of debentures or stock which may be issued by the bank; and any excess may be used for the purpose of the redemption of any Commonwealth debts, or State debts taken over by the Commonwealth. Under the terms of the new Sinking Fund Act passed in July, 1923, the future accumulations of the redemption fund are to be paid into the Sinking Fund for the repayment of Commonwealth debt.

(ii) *State Legislation.* The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the other banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

(iii) *Australian Note Issue.* In December, 1920, the Australian Note Issue was handed over to the control of the Commonwealth Bank, the notes, however, still remaining Treasury Notes. The Note Issue Department of the Bank, so credited, is administered by a Board including the Governor and Secretary of the Bank, a leading Treasury official, and two outside financial experts. The Note Issue has remained fairly constant during the last two years at a figure slightly exceeding £50 million pounds. The notes in circulation on 30th June, 1922, amounted to £53,556,698, of which approximately four-sevenths were held by the Banks and three-sevenths by the public. Against this there was a reserve of gold coin amounting to £23,347,797 10s., or nearly 44 per cent., and other assets including investments of £29,658,482. The investments are set out in detail as follows:—

**AUSTRALIAN NOTES ACCOUNT.—PARTICULARS OF INVESTMENTS AS AT
30th JUNE, 1922.**

Investment.	Amount.	Rate of Interest.	Date of Maturity.	Annual Amount of Interest.
	£	%		£
Commonwealth Inscribed Stock	3,014,716	3½	1/4/62 to 1/4/72	105,515
Commonwealth War Loan	63,640	4½	15/12/25	2,864
New South Wales Treasury Bills	7,400,000	4½	(a)	305,250
Victorian Debentures (face value £150,000)	147,000	5½	1/5/23	8,085
Victorian Debentures (face value £400,000)	392,000	6	1/5/23	23,520
Victorian Debentures	3,900,000	4½	(a)	160,875
Victorian Inscribed Stock	583,000	5½	(a)	30,608
Queensland Securities	1,490,000	5½	(a)	78,225
South Australian Treasury Bills	2,600,000	4½	(a)	107,250
South Australian Securities	326,000	6	(a)	19,560
Western Australian Stock	590,000	3½	1/1/26	22,125
Western Australian Treasury Bills	3,100,000	4½	(a)	127,875
Western Australian Securities	335,000	5½	(a)	17,587
Tasmanian Inscribed Stock	80,000	6	1/4/23	4,800
Tasmanian Inscribed Stock	75,000	6	1/10/22	4,500
Tasmanian Inscribed Stock	150,000	6	1/10/23	9,000
Tasmanian Treasury Bills	1,000,000	4½	(a)	41,250
Tasmanian Securities	469,000	5½	(a)	24,622
Advances and Fixed Deposits	3,943,126	3 to 6	Various	177,000
Total	29,658,482	..	..	1,270,511

(a) Not yet fixed.

2. **Banks in Operation.**—The eighteen banks trading in Australia at the 30th June, 1922, are arranged in the table hereafter according to the situation of their head offices. It is proposed in the few instances in which reference to the banks is made by name to arrange them in the order thus given with the exception of the Commonwealth Bank, which is placed first:—

CHEQUE-PAYING BANKS AT 30th JUNE, 1922.

Bank.	Head Office.
Bank of Australasia	London
Union Bank of Australia Limited	"
English, Scottish, and Australian Bank Limited	"
Commonwealth Bank of Australia	Sydney
Bank of New South Wales	"
Commercial Banking Company of Sydney Limited	"
Australian Bank of Commerce Limited	"
National Bank of Australasia Limited	Melbourne
Commercial Bank of Australia Limited	"
Bank of Victoria Limited	"
Royal Bank of Australia Limited	"
Queensland National Bank Limited	Brisbane
Bank of Adelaide	Adelaide
Western Australian Bank	Perth
Bank of New Zealand	Wellington
Comptoir National d'Escompte de Paris	Paris
Ballarat Banking Company Limited	Ballarat
Yokohama Specie Bank Limited	Yokohama

It is worthy of note that amalgamations, which have been such a feature in British banking of late years, have also been effected in Australia, the number of competitive joint-stock banks being thereby reduced considerably. During the calendar years 1917 and 1918 the following were recorded:—(a) the Royal Bank of Queensland Limited with Bank of North Queensland Limited; (b) City Bank of Sydney with Australian Bank of Commerce Limited; (c) National Bank of Tasmania Limited with Commercial Bank of Australia Limited; and (d) National Bank of Australasia Limited with Colonial Bank of Australasia Limited.

A further amalgamation was announced in August, 1920, viz., the London Bank of Australia Ltd. and the English, Scottish and Australian Bank Ltd. The amalgamated banks further strengthened their position by absorbing the Commercial Bank of Tasmania, which from May, 1921, ceased to exist independently. Finally, the National Bank of Australasia has absorbed the Bank of Queensland.

3. Capital Resources.—The paid-up capital of the cheque-paying banks, together with their reserve funds, the rate per cent., and the amount of their last dividends, are shown in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1922. In regard to the reserve funds it must be noted that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business:—

CHEQUE-PAYING BANKS.—CAPITAL RESOURCES, 1921-22.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last Half-yearly Dividend and Bonus.	Amount of Reserved Profits.
	£	%	£	£
Commonwealth Bank of Australia	4,000,000	10 and Bonus 3	487,500(c)	4,001,659
Bank of Australasia	2,500,000	15	187,500	3,425,000
Union Bank of Australia Ltd.	1,319,888	10	128,807(c)	2,833,057
English, Scottish and Australian Bank Ltd.	5,000,000	10	125,000	1,300,000
Bank of New South Wales	3,000,000	10	147,335	3,600,000
Commercial Banking Coy. of Sydney Ltd.	1,200,000	7	42,000	2,360,000
Australian Bank of Commerce Ltd.	2,713,139	10	103,050	250,000
National Bank of Australasia Ltd.	2,453,943(a)	4 Pref., 15 Ord.	53,361	1,593,164
Commercial Bank of Australia Ltd.	1,478,010(b)	9	66,510	13,322
Bank of Victoria Ltd.	750,000	10	37,500	657,059
Royal Bank of Australia Ltd.	800,000	10	19,994(d)	475,000
Queensland National Bank Ltd.	625,000	10	31,250	360,000
Bank of Adelaide	250,000	20	25,000	650,000
Western Australian Bank	3,904,989	10 Pref., 13½ Ord.	412,500	765,823
Bank of New Zealand	10,000,000	10	1,000,000(c)	1,675,000
Comptoir National d'Escompte de Paris	127,500	8	5,100	2,812,484
Ballarat Banking Coy. Ltd.	10,000,000	12	600,000	57,000
Yokohama Specie Bank Ltd.				6,100,000
Total	50,122,469	..	..	32,928,568

(a) Subject to estimated deficiency in connexion with Special Assets Trusts Coy. Ltd. (b) £416,760 preferential, £1,061,250 ordinary. (c) For twelve months. (d) Dividend for quarter.

4. **Liabilities and Assets.**—(i) *Liabilities, each State, Quarter ended 30th June, 1922.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and they have since the year 1908 furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1922, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shown for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shown in the preceding table. The figures set out in the tables which follow are inclusive in every case of the Commonwealth Bank.

CHEQUE-PAYING BANKS—LIABILITIES, JUNE QUARTER, 1922.

State.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total. Liabilities.
				Not Bearing Interest.	Bearing Interest. (b)	Total.	
	£	£	£	£	£	£	£
New South Wales	68,953	969,187	1,541,923	52,276,680	54,086,297	106,362,977	108,943,040
Victoria ..	88,469	362,926	1,183,745	35,965,994	53,694,677	89,660,671	91,295,811
Queensland ..	(a)	655,172	505,457	17,467,280	33,269,011	50,736,291	51,896,920
South Australia..	23,804	80,930	657,842	9,193,861	13,276,784	22,470,645	23,233,221
Western Australia	26,255	186,681	323,361	5,950,250	6,336,915	12,287,165	12,823,462
Tasmania ..	2,413	44,895	162,376	2,880,070	3,922,442	6,802,512	7,012,196
Northern Territory	..	79	3,000	85,049	139,852	224,901	227,980
Total ..	209,894	2,299,870	4,377,704	123,819,184	164,725,978	288,545,162	295,432,630

(a) In Queensland, Treasury Notes were used instead of bank notes.

(b) Including £36,212,675 Commonwealth Savings Bank Deposits.

(ii) *Liabilities, all States, June Quarters, 1918 to 1922.* In the subjoined table, which shows the average liabilities of the banks for the quarters ended 30th June, 1918 to 1922, for Australia as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have both shared in that increase, although the latter show by far the larger proportion. This is owing in some measure to the increase in the Commonwealth Savings Bank deposits consequent upon the absorption of the Queensland Savings Bank in 1920-21.

CHEQUE-PAYING BANKS—LIABILITIES, JUNE QUARTER, 1918 TO 1922.

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances Due to Other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest. (a)	Total.	
	£	£	£	£	£	£	£
1918 ..	229,639	1,726,045	4,486,497	112,262,321	112,504,432	224,766,753	231,208,934
1919 ..	221,755	1,813,390	6,540,609	118,988,567	130,069,687	249,058,254	257,634,008
1920 ..	224,130	2,343,713	4,505,117	133,912,800	131,715,792	265,628,592	272,701,552
1921 ..	213,868	2,392,074	5,745,770	127,789,314	154,767,037	282,556,351	290,908,063
1922 ..	209,894	2,299,870	4,377,704	123,819,184	164,725,978	288,545,162	295,432,630

(a) Including Commonwealth Savings Bank Deposits.

(iii) *Assets, each State, Quarter ended 30th June, 1922.* The average assets of the banks are shown in the following table :—

CHEQUE-PAYING BANKS.—ASSETS, JUNE QUARTER, 1922.

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts, Over-drafts, and all other Assets.	Australian Notes.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W.	10,029,566	329,674	23,194,358	2,624,907	792,441	2,836,133	75,312,841	10,255,237	125,375,157
Victoria	5,384,888	44,562	7,074,905	1,594,739	3,469,658	1,768,486	55,180,844	10,730,372	85,248,454
Q'land	2,281,331	10,257	16,737,879	938,334	505,098	646,423	23,702,482	3,374,318	48,196,122
S. Aust.	1,839,191	64	493,393	323,708	247,602	513,423	12,841,216	3,267,154	19,525,751
W. Aust.	1,203,262	165,401	910,938	254,999	142,756	703,615	10,675,452	1,778,844	15,835,267
Tasmania	604,770	31	1,574,186	155,154	46,876	122,040	4,511,973	905,437	7,920,467
Nor. Ter.	7,694	1,362	..	800	45,022	13,461	12,810	3,281	84,430
Total	21,350,702	551,351	49,985,659	5,892,641	5,249,453	6,603,581	182,237,618	30,314,643	302,185,648

(iv) *Assets, all States, June Quarters, 1918 to 1922.* The average assets of the banks for the June quarters of each of the years 1918 to 1922 are given below.

CHEQUE-PAYING BANKS.—ASSETS, JUNE QUARTERS, 1918 TO 1922.

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.(a)	Total Assets.
	£	£	£	£	£	£	£
1918 ..	21,518,264	889,032	5,300,834	2,149,799	6,087,990	200,386,561	236,332,480
1919 ..	21,341,026	793,883	5,215,550	2,274,422	7,798,735	240,527,120	277,950,736
1920 ..	20,704,078	625,786	5,375,279	2,909,031	7,819,654	232,440,445	269,874,273
1921 ..	21,066,405	560,427	5,736,389	2,406,515	6,644,558	276,331,601	312,745,895
1922 ..	21,350,702	551,351	5,892,641	5,249,453	6,603,581	262,537,920	302,185,648

(a) Including Government and Municipal securities, and Australian notes.

The increase in the total amount of assets is mainly due to advances, and the growth in 1919 and 1921 is almost exactly accounted for by increases in this respect, due largely to the action of the banks in financing wheat and other commodities awaiting shipment and in assisting individuals to invest in war loans. In 1920 the liabilities exceeded the assets by about three millions. This was owing to the excess of exports over imports, and the fact that payments had been made by the British Government for wheat and wool in anticipation of shipments not then effected.

5. Percentage of Coin, Bullion, and Australian Notes to Liabilities at Call.—

(i) *General.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table “liabilities at call” are therefore understood to include the note circulation of the banks and the deposits not bearing interest. Since 1912, however, the former item has steadily decreased, and is now almost negligible as compared with the latter.

**CHEQUE-PAYING BANKS.—PERCENTAGE ON LIABILITIES OF COIN, BULLION,
AND AUSTRALIAN NOTES, 1918 TO 1922.**

Year.	Liabilities at Call.	Coin, Bullion, and Australian Notes.	Percentage on Liabilities at Call.
	£	£	%
1918	112,491,960	56,359,868	50.10
1919	119,210,322	57,894,016	48.56
1920	134,136,930	55,940,627	41.70
1921	128,003,182	56,119,744	43.84
1922	124,029,078	52,216,696	42.10

It would appear that the banks generally consider it advisable to hold from 40 to 50 per cent. of the amount of liabilities at call in coin, bullion, and notes.

(ii) *Queensland Treasury Notes.* In Queensland, Treasury notes took the place of bank notes in 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1922, was £23,271. Under the Australian Notes Act, previously referred to, the issue of notes by a State is now prohibited.

(iii) *Percentage in each State.* The proportion of coin, bullion, and Australian notes to liabilities at call varies considerably in the different States, and sometimes in the same State from year to year. A table is appended showing the percentage for each State for the quarter ended 30th June in each of the years 1918 to 1922 :—

**CHEQUE-PAYING BANKS.—PERCENTAGE ON LIABILITIES OF COIN, BULLION,
AND AUSTRALIAN NOTES, 1918 TO 1922.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1918 ..	48.06	48.95	51.55	54.81	57.06	61.30	12.66	50.10
1919 ..	50.52	45.67	48.35	43.32	60.21	55.92	11.05	48.56
1920 ..	43.07	38.36	39.69	45.25	50.75	41.17	14.41	41.70
1921 ..	41.03	46.48	34.75	52.18	60.25	55.70	13.64	43.84
1922 ..	39.38	44.82	32.44	55.40	52.66	52.39	14.51	42.10

6. **Deposits and Advances.**—(i) *Deposits.* The amount and average per head of population of deposits held by the banks during each of the last five years is given here-under.

CHEQUE-PAYING BANKS.—DEPOSITS, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
TOTAL.								
	£	£	£	£	£	£	£	£
1918..	86,489,590	68,663,889	34,133,083	18,594,391	9,770,507	6,750,979	364,314	224,766,753
1919..	93,865,093	78,337,458	35,477,051	23,650,545	10,663,143	6,720,381	344,583	249,058,254
1920..	103,373,262	86,922,563	32,387,302	22,421,647	12,502,476	7,701,223	320,119	265,628,592
1921..	107,676,418	85,756,516	46,769,215	22,087,673	12,248,654	7,736,798	281,077	282,556,351
1922..	106,362,977	89,660,671	50,736,291	22,470,645	12,287,165	6,802,512	224,901	288,545,162

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1918..	45 7 2	48 10 5	49 13 3	42 6 11	31 9 8	33 4 0	71 4 6	45 5 1
1919..	48 0 4	53 13 9	50 4 2	52 6 6	33 5 8	31 19 9	71 19 1	48 14 9
1920..	50 1 7	57 11 11	43 9 3	46 3 5	38 0 2	36 12 6	75 11 8	49 13 5
1921..	51 5 3	55 18 4	61 5 7	44 10 0	36 16 6	36 4 7	72 1 1	51 18 3
1922..	49 11 8	57 4 3	65 0 3	44 10 11	36 6 1	31 14 9	61 0 4	51 19 1

(ii) *Advances.* In the quarterly statements furnished by the banks, the column headed "all other debts due to the banks" is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The form prescribed for quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shows the totals for each State during the years 1918 to 1922. Part of the very large rise in 1918-19 is due to the advances made by the banks to their clients, to enable them to subscribe to the Commonwealth War Loan.

CHEQUE-PAYING BANKS.—ADVANCES, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1918 ..	56,176,269	42,185,873	18,685,598	10,877,107	9,183,968	3,265,637	36,006	140,410,458
1919 ..	70,891,172	53,645,558	21,773,778	17,280,249	10,562,174	3,785,362	14,532	177,952,825
1920 ..	68,171,203	45,642,462	21,485,247	10,676,319	10,744,799	3,957,318	16,193	160,693,541
1921 ..	82,317,843	57,826,082	23,267,979	13,628,176	10,909,657	5,462,908	23,115	193,435,760
1922 ..	75,312,841	55,180,844	23,702,482	12,841,216	10,675,452	4,511,973	12,810	182,237,618

(iii) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shows to what extent the needs of one State are supplied by the resources of another State, and, where the percentage for Australia as a whole exceeds 100 (as it did in the early years of the century), the banks must have supplied the deficiency from their own resources, or from deposits obtained outside Australia. The following figures show, however, that the banking business of Australia has been self-contained in every State during the period under review :—

CHEQUE-PAYING BANKS.—PERCENTAGE OF ADVANCES ON DEPOSITS, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	All States.
	%	%	%	%	%	%	%	%
1918 ..	64.95	61.44	54.74	58.50	94.00	48.37	9.88	62.47
1919 ..	75.52	68.48	61.43	73.06	99.05	56.33	4.22	71.45
1920 ..	65.95	52.40	66.34	47.61	85.94	51.39	5.06	60.50
1921 ..	76.45	67.43	49.75	61.70	89.07	70.61	8.22	68.46
1922 ..	70.81	61.54	46.72	57.15	86.88	66.33	5.70	63.16

7. *Clearing Houses.*—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1922 the total clearances in Sydney amounted to £726,583,000, and in Melbourne to £623,790,000. Owing to the different distribution of the banking business in the two cities, these figures do not necessarily afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne. Returns of all Australian Clearing Houses for the last five years are shown in the following table :—

CHEQUE-PAYING BANKS.—CLEARING HOUSE RETURNS, 1918 TO 1922.

Year.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.
	£	£	£	£	£
1918 ..	552,216,000	493,768,000	134,050,000	105,705,000	50,518,000
1919 ..	590,098,000	544,211,000	128,006,000	123,880,000	56,900,000
1920 ..	764,546,000	725,006,000	160,539,000	166,011,000	80,758,000
1921 ..	709,734,000	609,335,000	157,503,000	157,549,000	67,619,000
1922 ..	726,583,000	623,790,000	147,374,000	172,836,000	75,279,000

§ 3. Savings Banks.

1. **General.**—In the following tables dealing with Savings Banks operations the figures for all the States except Tasmania refer to financial years ended 30th June. In the case of Tasmania, figures for the two joint-stock savings banks were made up to the last day of February in each year up to 1918–19, but in 1919–20 were made up to August, and will be so estimated in subsequent years. The figures in each State are inclusive of the Savings Bank Department of the Commonwealth Bank, and in the case of the Commonwealth Bank figures are made up to the 30th June, 1922.

2. **Depositors.**—The number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, and the number per 1,000 of the population, in each of the last five years is shown in the following table:—

SAVINGS BANKS.—DEPOSITORS, 1917–18 TO 1921–22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
NUMBER.								
1917–18	920,337	913,875	313,248	337,709	182,140	95,154	1,274	2,763,737
1918–19	984,951	966,543	343,424	357,310	192,879	99,565	1,167	2,945,839
1919–20	1,053,893	1,014,223	364,149	377,435	204,005	108,289	987	3,122,981
1920–21	1,126,157	1,072,554	327,065	396,970	217,136	115,502	935	3,256,319
1921–22	1,186,948	1,127,892	337,621	414,570	225,136	120,252	861	3,413,280
PER 1,000 OF POPULATION.								
1917–18	482	645	453	768	585	469	242	555
1918–19	501	659	482	784	597	472	237	573
1919–20	519	674	496	799	611	498	225	589
1920–21	536	698	425	798	652	545	238	597
1921–22	553	718	430	814	663	564	235	613

The fall in the number of depositors in Queensland in 1920–21 is due to the amalgamation of the State and Commonwealth Savings Banks.

In connexion with the figures showing number of depositors per 1,000 of the population, it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the names of children. Even so, the proportion is a large one, amounting in the case of Australia to about eight-thirteenths, and rising in Victoria to over seven-tenths and in South Australia to four-fifths. It may be pointed out also that as it is possible in some States for the same person to have accounts in both Commonwealth and State Savings Banks, the figures given are probably slightly in excess of the number of individual depositors.

3. **Deposits.**—The amount of deposits in the savings banks of the six States reaches the large sum of £162,000,000, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that, while not granting facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, and in addition allow interest on the minimum monthly balance instead of charging a small fee for keeping the account, as is the practice of the ordinary banks. The Savings Banks of the six States, including the two trustee banks of Tasmania, have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, even by telegraph.

The table below shows the amount at credit of depositors, the average per depositor, and the average amount deposited for head of population at the end of each of the last five years :—

SAVINGS BANKS.—DEPOSITS, 1917-18 TO 1921-22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
TOTAL.								
	£	£	£	£	£	£	£	£
1917-18	43,039,012	34,598,186	16,501,325	12,899,036	6,290,027	2,917,235	95,071	116,339,892
1918-19	47,070,342	38,772,024	17,510,975	14,803,237	7,002,473	3,285,393	81,097	128,525,541
1919-20	49,933,535	42,317,863	17,909,571	15,496,514	7,258,384	3,930,181	57,106	136,903,154
1920-21	57,394,441	48,970,989	18,587,942	16,317,353	7,663,440	4,159,502	53,790	153,147,457
1921-22	61,791,273	52,131,032	19,394,156	16,931,678	7,759,317	4,224,662	41,115	162,273,233

AVERAGE PER DEPOSITOR.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917-18	46 15 3	37 17 2	52 13 7	38 3 11	34 10 8	30 13 2	74 12 6	42 1 11
1918-19	47 15 9	40 2 3	50 19 9	41 8 7	36 8 2	32 19 11	69 9 8	43 12 7
1919-20	47 7 7	41 14 6	49 3 8	41 1 2	35 11 7	36 5 10	57 17 2	43 16 9
1920-21	50 19 4	45 13 2	56 16 8	41 2 1	35 5 10	36 0 3	57 10 7	47 0 7
1921-22	52 1 2	46 4 5	57 8 10	40 16 10	34 9 4	35 2 7	47 15 1	47 10 10

PER HEAD OF POPULATION.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917-18	22 3 4	24 5 10	23 15 2	28 11 6	20 8 8	14 14 3	19 10 4	23 2 7
1918-19	23 10 10	26 6 4	24 3 3	31 12 0	21 18 4	16 0 6	17 8 5	24 14 7
1919-20	24 3 1	27 19 8	23 19 2	31 16 8	22 0 6	18 13 6	13 11 1	25 10 10
1920-21	27 6 3	31 17 8	24 3 5	32 15 11	23 0 1	19 12 5	13 13 11	28 1 6
1921-22	28 15 5	33 3 10	24 13 10	33 10 6	22 17 1	19 15 11	11 4 6	29 2 10

A comparison of the figures showing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in some States than in others ; in other words, in one State a comparatively larger proportion of the population makes use of the savings banks than in another, with the result that there is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year, except that Victoria shows a steady advance during the period under review.

The average amount deposited per head of population increased during the period by over 25 per cent., the figures for South Australia being particularly noticeable.

4. Rates of Interest.—The rates of interest allowed, and the limits of interest-bearing deposits, are as follows :—New South Wales, Government Savings Bank, 4 per cent. up to £500 and 3½ per cent. on the excess up to £1,000 ; Victoria, 4 per cent. on first £500 and then 3 per cent. for a further £250, also 4 per cent. on deposit stock up to £1,000 ; South Australia, 3½ per cent. on accounts closed during the year, and 4½ per cent. up to £350 on accounts remaining open ; Western Australia, 3½ per cent. from £1 to £500, and 3 per cent from £500 to £1,000 ; also 4 per cent. on deposit stock up to £1,000 ; Hobart Trustees' Savings Bank, 4½ per cent. up to £300 ; Launceston Trustees' Savings Bank, 4½ per cent. up to £150, and Commonwealth Savings Bank, 3½ per cent. on the first £1,000, and 3 per cent. upon another £300.

5. Annual Business.—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out that many accounts are used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to nearly double

the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased approximately 6 per cent. during the same year. The following table shows the business transacted during the year 1921-22 :—

SAVINGS BANKS.—TRANSACTIONS, 1921-22.

State.	Total Deposits at end of Year 1920-21.	Amounts Deposited during Year 1921-22.	Interest Added during Year 1921-22.	Total.	Amounts Withdrawn during Year 1921-22.	Total Deposits at end of Year 1921-22.
	£	£	£	£	£	£
N.S. Wales ..	57,394,441	60,288,585	2,140,095	119,823,121	58,031,848	61,791,273
Victoria ..	48,970,989	47,416,242	1,804,233	98,191,464	46,060,432	52,131,032
Queensland ..	18,587,942	20,755,463	621,331	39,964,736	20,570,580	19,394,156
South Australia	16,317,353	13,509,054	625,932	30,452,339	13,520,661	16,931,678
West. Australia	7,663,440	7,680,475	247,725	15,591,640	7,832,323	7,759,317
Tasmania ..	4,159,502	3,373,149	149,909	7,682,560	3,457,898	4,224,662
Nor. Territory	53,790	27,369	1,488	82,647	41,532	41,115
Total ..	153,147,457	153,050,337	5,590,713	311,788,507	149,515,274	162,273,233

6. **Commonwealth Savings Bank.**—The figures quoted in the preceding tables include those relating to the Savings Bank Department of the Commonwealth Bank which commenced operations in Victoria on the 15th July, 1912, in Queensland on the 16th September, 1912, in the Northern Territory on the 21st October, 1912, and in the States of New South Wales, South Australia, and Western Australia on the 13th January, 1913. Extensive use is made of the country post-offices as local agencies.

The Commonwealth Bank absorbed the Tasmanian State Savings Bank in January, 1913, on terms set out in Official Year Book No. 6. The transfer of the Queensland Savings Bank was effected in 1920.

The following table gives the number of depositors, and the amount at credit on 30th June, 1922, at the various branches of the Commonwealth Savings Bank :—

COMMONWEALTH SAVINGS BANK, 30th JUNE, 1922.

Locality.	Number of Depositors.	Amount at Credit.
		£
New South Wales	225,359	7,209,681
Victoria	134,014	5,404,114
Queensland	337,621	19,394,156
South Australia	46,965	2,090,523
Western Australia	57,261	1,961,865
Tasmania	58,026	1,513,443
Northern Territory	861	41,115
Papua	1,513	75,729
London	7,397	366,354
Total	869,017	38,056,980

A series of graphs illustrating the progress of banking accompanies this chapter.

§ 4 Companies.

1. **General.**—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

2. **Trustees, Executors and Agency Companies.**—Returns are available for eight Victorian, two New South Wales, one Queensland, four South Australian, one Western Australian, three Tasmanian companies, and two with head offices in New Zealand. The paid-up capital of these twenty-one companies amounted to £865,744; reserve funds and undivided profits to £590,150; other liabilities, £298,131; total liabilities, £1,754,025.

Among the assets are included:—Deposits with Governments, £197,504; other investments in public securities, fixed deposits, etc., £535,265; loans on mortgage, £155,777; property owned, £504,098; other assets, £361,381. The net profits for the year were £145,915. Returns as to the amount at credit of estates represented by assets are available for eleven companies only.

3. Registered Building and Investment Societies.—(i) *General.* Returns have been received relating to 227 societies, viz., 148 in New South Wales, 30 in Victoria, 12 in Queensland, 18 in South Australia, 15 in Western Australia, and 4 in Tasmania. The principal information available is contained in the appended table.

REGISTERED BUILDING AND INVESTMENT SOCIETIES.—SUMMARY, 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	All States.
Number of societies ..	148	30	12	18	15	4	227
Number of shareholders ..	(a)	7,893	4,869	10,621	5,797	1,855	31,035 ^b
Number of shares ..	(a)	(a)	1,011,442	32,623	19,914	17,428	1,081,407 ^c
Number of borrowers ..	(a)	9,520	4,206	2,314	1,437	1,286	18,763 ^b
Income for year from interest ..	£ 160,404	214,392	51,125	18,538	(d)	27,501	471,960
Working expenses for year ..	£ 128,910	81,529	9,852	8,887	7,984	9,900	247,062
Amount of deposits during year ..	£ (a)	925,533	98,555	4,964	75,569	57,640	1,162,261 ^b
Repayment of loans during year ..	£ (a)	770,114	158,177	68,387	68,723	92,193	1,157,594 ^b
Loans granted during year ..	£ (a)	834,992	218,412	107,647	76,165	86,918	1,324,134 ^b

(a) Not available. (b) Exclusive of New South Wales. (c) Exclusive of New South Wales and Victoria. (d) Included in repayment of loans.

(ii) *Liabilities.* The balance-sheets cover various periods ended during the second half of 1921 and the first half of 1922, so that the returns may be assumed to correspond roughly to the financial year 1921–22.

REGISTERED BUILDING AND INVESTMENT SOCIETIES.—LIABILITIES, 1921–22.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Overdrafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	2,028,004	440,610	506,603	131,422	3,106,639
Victoria ..	1,358,458	429,478	959,206	143,412	2,890,554
Queensland ..	576,382	45,178	106,569	36,441	764,570
South Australia ..	325,026	40,595	9,688	22,334	397,643
Western Australia ..	181,901	..	31,261	10,740	223,902
Tasmania ..	128,605	67,036	181,076	5,396	382,113
Total ..	4,598,376	1,022,897	1,794,403	349,745	7,765,421

(iii) *Assets.* The assets of the companies for the same period were as follows:—

REGISTERED BUILDING AND INVESTMENT SOCIETIES.—ASSETS, 1921–22.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	2,732,076	(a)	374,563	3,106,639
Victoria ..	2,661,272	181,625	149,310	2,992,207
Queensland ..	717,320	14,126	41,533	772,979
South Australia ..	361,760	16,953	18,930	397,643
Western Australia ..	215,467	159	8,276	223,902
Tasmania ..	340,262	10,390	31,459	382,111
Total ..	7,028,157	223,253	624,071	7,875,481

(a) Included with other assets.

4. **Registered Co-operative Societies.**—(i) *General.* Returns are available for 197 societies, of which 79 are in New South Wales, 74 in Victoria, 3 in Queensland, 19 in South Australia, and 22 in Western Australia. The principal information available is contained in the table hereunder :—

REGISTERED CO-OPERATIVE SOCIETIES.—SUMMARY, 1921.

Details.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	All States. (a)
Number of Societies on 31st December, 1921	79	74	3	19	22	197
Total No. of members on 31st December, 1921	49,670	19,338	19,332	28,762	6,408	123,510
Total income for year 1921	£ 3,720,502	1,706,472	24,956	1,276,015	311,573	7,039,518
Working expenses for year ended 31st December, 1921	£ 3,470,446	239,286	20,872	227,634	294,663	4,252,901

(a) Exclusive of Tasmania.

(ii) *Liabilities.* As in the case of Building and Investment Societies, the balance-sheets of Co-operative Societies cover various periods ended during the financial year 1921–22. The liabilities of the 197 societies are shown in the following table :—

REGISTERED CO-OPERATIVE SOCIETIES.—LIABILITIES, 1921–22.

State.	Paid-up Capital.	Reserve Funds.	Bank Overdrafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, etc.	Total Liabilities.
	£	£	£	£	£
New South Wales ..	519,436	253,709	(a)	299,271	1,072,416
Victoria ..	253,469	76,531	411,658	90,572	832,230
Queensland ..	..	1,803	676	23,849	26,328
South Australia ..	505,297	90,575	162,923	141,258	900,053
Western Australia ..	37,283	7,429	25,647	9,574	79,933
Total ..	1,315,485	430,047	600,904	564,524	2,910,960

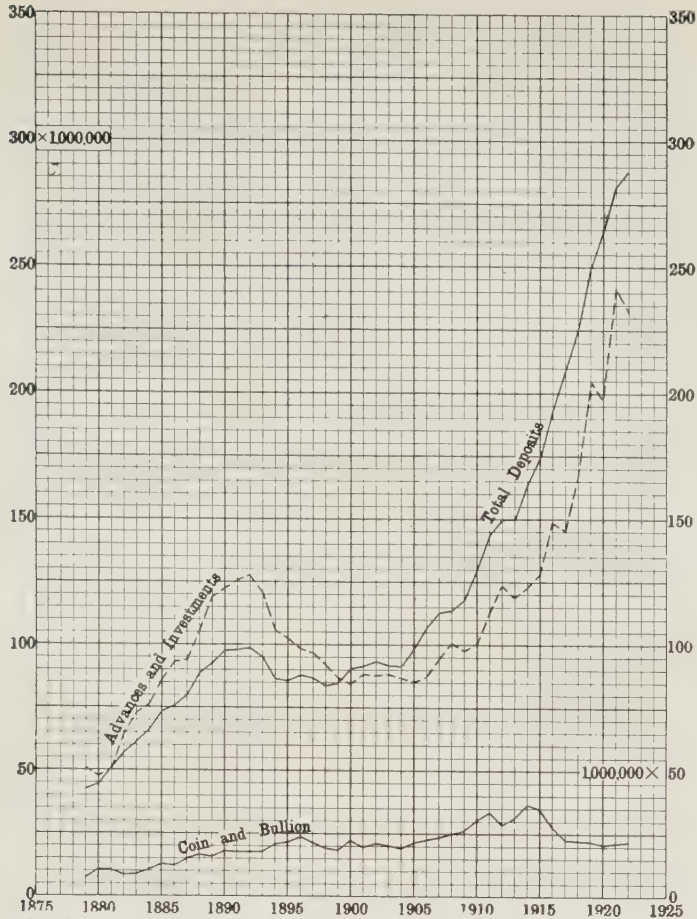
(a) Included in other liabilities.

(iii) *Assets.* The assets of the societies are given hereunder :—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1921–22.

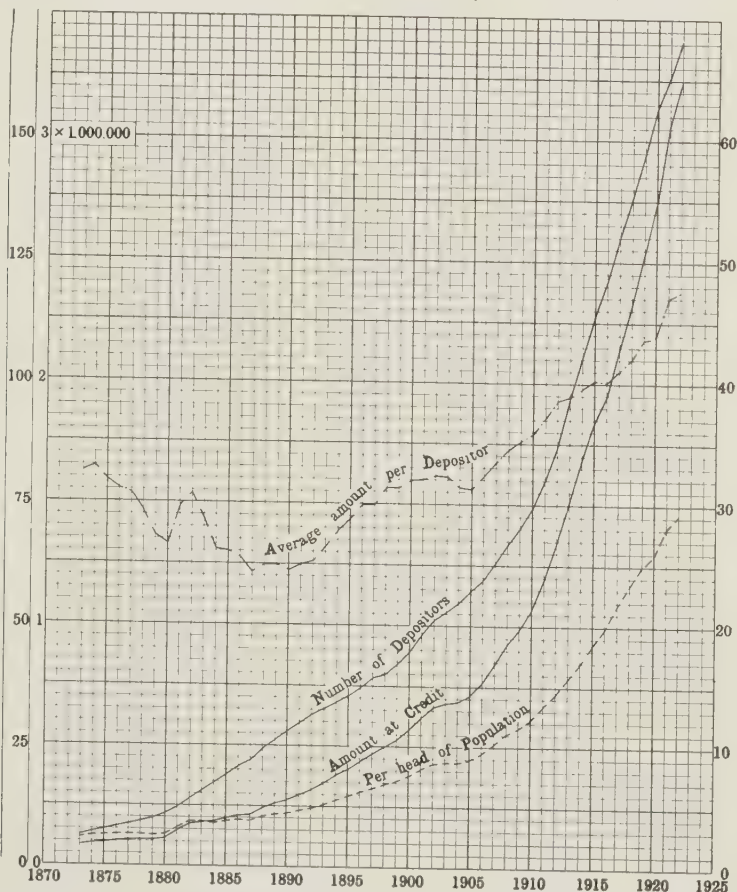
State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ..	786,304	213,794	72,318	1,072,416
Victoria ..	324,182	275,251	276,988	876,421
Queensland ..	7,904	2,269	26,126	36,299
South Australia ..	394,682	226,114	279,257	900,053
Western Australia ..	42,612	25,636	11,685	79,933
Total ..	1,555,684	743,064	666,374	2,965,122

CHEQUE-PAYING BANKS, AUSTRALIA, 1879 TO 1922.



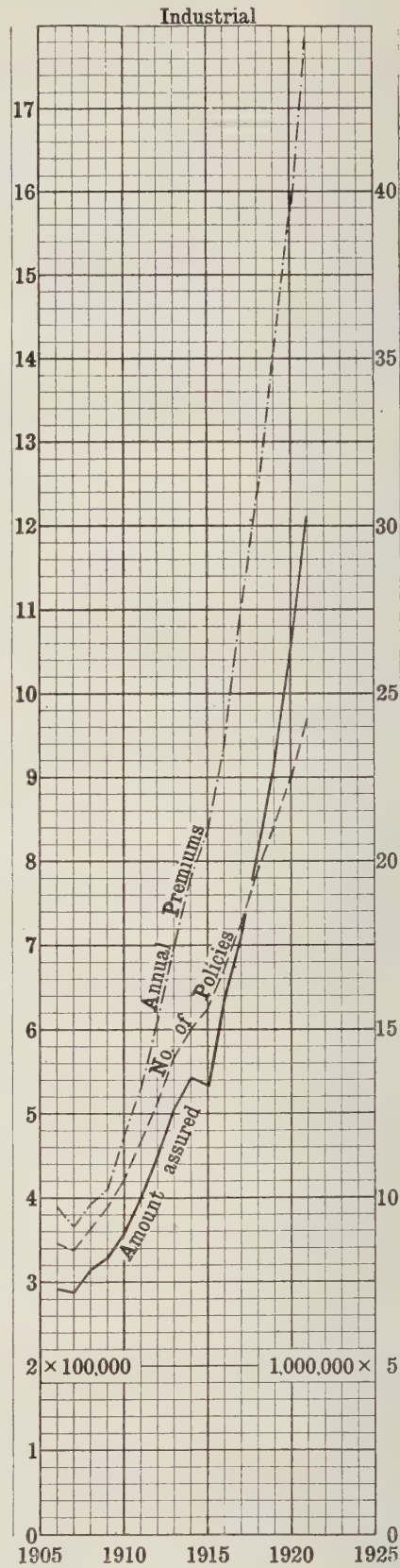
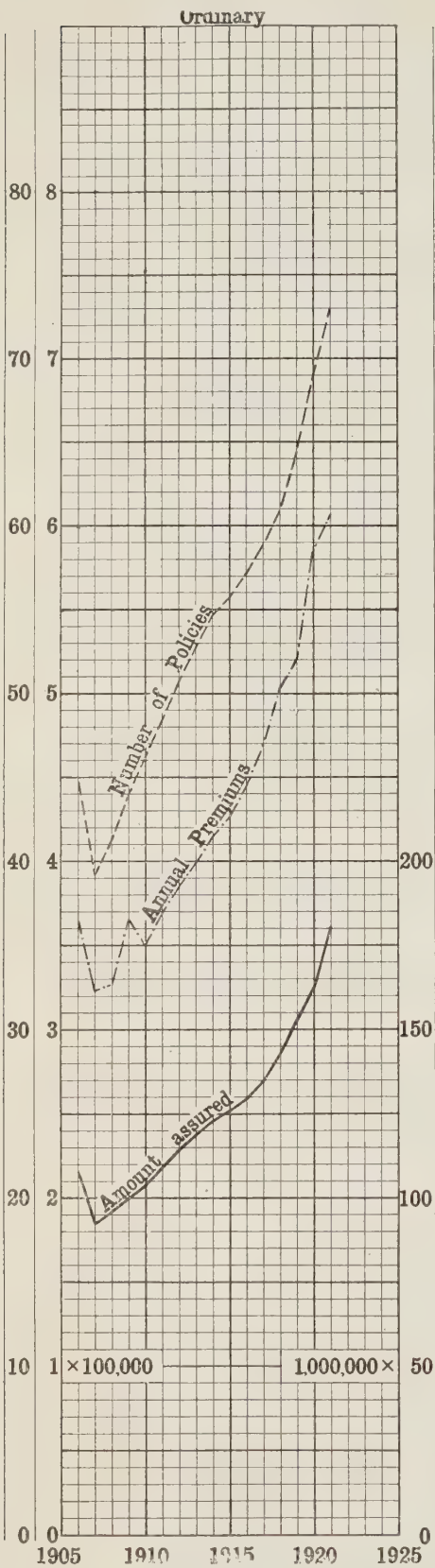
EXPLANATION.—The base of each small square represents an interval of one year and its vertical height a sum of £5,000,000.

SAVINGS BANKS, AUSTRALIA, 1873 TO 1922.



EXPLANATION.—The base of each small square represents an interval of one year. Of the two scales on the left, the outer one shows the amount at credit, and the inner one the number of depositors, while the vertical height of each small square represents £2,500,000, and 50,000 in number. The scale on the right shows the average amount per depositor, and per head of population, while the vertical height of each small square represents £1.

LIFE ASSURANCE, ORDINARY AND INDUSTRIAL DEPARTMENTS.—AUSTRALIA,
1906 TO 1921.



EXPLANATION.—The base of each small square represents in each graph an interval of one year.

In the case of the "Ordinary" Assurance graph there are three scales—two on the left—the outer one representing the Annual Premiums, and the inner one the number of Policies in force,—and one on the right representing the Amount Assured, exclusive of bonus additions. The vertical height of each small square represents £100,000 premium, 10,000 in number and £5,000,000 in sum assured.

In the case of the "Industrial" Assurance graph, the scale on the left represents the Annual Premiums and the number of Policies in force, and the scale on the right the Amount Assured, exclusive of bonus additions. The vertical height of each small square represents £20,000 premium, 20,000 in number and £500,000 in sum assured.

§ 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to “insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned.” With the exception of Act No. 12 of 1905, “An Act relating to assurance on the lives of children by life assurance companies or societies,” no legislation relating to life assurance has been passed by the Commonwealth Parliament, and life assurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies’ or special Acts.

Returns for the year 1921 have been collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. The figures refer to Australian business only.

2. **Companies Transacting Business.**—(i) *General.* The number of companies at present established in the Commonwealth is twenty, of which the full name and location of head office are set out in the table below.

LIFE ASSURANCE SOCIETIES OPERATING IN AUSTRALIA, 1921.

Full Name of Company or Society.	Head Office.
Australian Mutual Provident Society	Sydney
Mutual Life and Citizens’ Assurance Company Limited	”
City Mutual Life Assurance Society Limited	”
Australian Metropolitan Life Assurance Company Limited	”
People’s Prudential Assurance Company Limited	”
Assurance and Thrift Association Limited	”
Co-operative Assurance Company Limited	”
Australian Provincial Assurance Association Limited	”
Australian Alliance Assurance Company Limited	Melbourne
National Mutual Life Association of Australasia Limited	”
Victoria Life and General Insurance Company	”
Colonial Mutual Life Assurance Society Limited	”
Australasian Temperance and General Mutual Life Assurance Society Limited	”
Life Insurance Company	”
Queensland State Insurance Office	Brisbane
Provident Life Assurance Company	Dunedin
Liverpool and London and Globe Insurance Company	Liverpool
Equitable Life Assurance Society of the United States	New York
Mutual Life Insurance Society of New York	”
New York Life Insurance Society	”

Early in 1923 the Equitable Life Assurance Society re-insured its entire Australasian business with the National Mutual Life Association, which accepted the transfer of the whole of the assets of the Equitable consisting of property, bonds, and deposits.

Many of the Australian companies are purely mutual; the following, however, are partly proprietary, the figures in brackets representing the shareholders’ capital paid up:—The Victoria Life and General (£40,000), Mutual Life and Citizens’ (£200,000), Metropolitan (£11,844), Prudential (£10,000), Life Insurance Company (£71,500), Assurance and Thrift (£17,684), Co-operative Assurance (£73,639), and Australian Provincial Association (£265,900). Of foreign companies transacting business in Australia, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders’ capital amounting to £531,050, £21,000, and £20,550 respectively.

(ii) *Ordinary and Industrial Business.*—Of the societies enumerated in the preceding paragraph, the following seven in 1921 transacted both ordinary and industrial business :—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, the Colonial Mutual Life Assurance Society, the Life Insurance Company, and the Co-operative Assurance Company.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

In dealing with the returns from the various companies, those relating to ordinary and industrial business have, where possible, been kept separate, while figures relating to companies whose head offices are in New Zealand or in Europe or America have been restricted to the Australian business only of those companies.

3. **Australian Business, 1921.**—(i) *Ordinary.* The subjoined table shows the ordinary life business in force at the latest dates available for the twenty societies conducting operations in Australia :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS, 1921.

Society.	Policies in force exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society	303,281	89,633,910	2,755,908
Mutual Life and Citizens' Assurance Company Limited	104,262	20,784,570	714,224
City Mutual Life Assurance Society	40,152	9,208,616	349,708
Australian Metropolitan Life Assurance Company	6,558	822,454	34,570
Australian Alliance Assurance Company	153	51,137	1,098
National Mutual Life Association of Australia	90,332	23,732,842	865,698
Victoria Life and General Insurance Company	33	23,400	360
Colonial Mutual Life Assurance Society	35,146	7,644,609	277,690
People's Prudential Assurance Company	6,499	599,571	(a) 41,388
Australasian Temperance and General Mutual Life Assurance Society	67,651	9,881,963	373,767
Liverpool and London and Globe Insurance Company (Life Branch)	205	70,991	2,034
Provident Life Assurance Company	1,270	134,575	5,139
Life Insurance Company	10,723	2,702,476	111,804
Assurance and Thrift Association Limited	1,823	344,568	14,184
Co-operative Assurance Company	1,940	511,181	(a) 31,172
Australian Provincial Assurance Association Limited	27,394	5,966,570	213,128
The Queensland State Insurance Office	23,522	4,710,861	165,312
Equitable Life Assurance Society of United States	2,688	878,140	30,163
Mutual Life Insurance Society of New York	2,444	924,451	19,540
New York Life Assurance Society	3,934	2,067,183	67,488
Total	730,010	180,694,068	6,074,375

(a) Including Industrial.

The figures for the last five years are as follows :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS, 1917 to 1921,

Year.			Policies.	Amount.	Annual Premium Income.
			No.	£	£
1917	..	..	588,514	135,059,558	4,692,591
1918	..	..	610,387	142,790,868	5,050,088
1919	..	..	643,975	153,682,007	5,209,139
1920	..	..	692,160	168,255,272	5,871,894
1921	..	..	730,010	180,694,068	6,074,375

(ii) *Industrial.* Information in regard to the industrial business of the nine societies transacting this kind of business is given in the following table :—

INDUSTRIAL ASSURANCE.—AUSTRALIAN BUSINESS, 1921.

Society.					Policies in Force.	Amount Assured.	Annual Premium Income.
					No.	£	£
Australian Mutual Provident Society	..	..	..	..	242,669	10,998,041	566,942
Mutual Life and Citizens' Assurance Company	..	..	..	..	263,632	5,668,152	320,334
Australian Metropolitan Life Assurance Company	..	..	..	..	43,324	1,407,981	74,698
Colonial Mutual Life Assurance Society	..	..	..	..	91,270	2,823,186	162,178
People's Prudential Assurance Company	..	..	..	..	5,852	159,565	(a)
Australasian Temperance and General Mutual Life Assurance Society	..	..	..	..	296,266	8,391,981	629,753
Provident Life Assurance Company	..	..	..	..	19,206	561,562	28,502
Life Insurance Company	..	..	..	..	4,256	112,927	7,439
Co-operative Assurance Company	..	..	..	..	6,544	191,364	(a)
Total	..	..	..	..	973,019	30,314,759	1,789,846

(a) Included in ordinary.

The figures for the last five years are as follows :—

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN BUSINESS, 1917 to 1921.

Year.			Policies.	Amount.	Annual Premium Income.
			No.	£	£
1917	..	..	725,637	17,750,883	1,094,333
1918	..	..	788,145	20,208,358	1,239,685
1919	..	..	841,001	22,755,456	1,390,899
1920	..	..	904,346	26,223,335	1,586,313
1921	..	..	973,019	30,314,759	1,789,846

4. Receipts and Expenditure.—(i) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in Australia. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included with the companies doing industrial business.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1921.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society	4,661,707	2,814,780	1,846,927
Mutual Life and Citizens' Assurance Company ..	1,084,610	780,331	304,279
City Mutual Life Assurance Society	570,483	289,265	281,218
Australian Metropolitan Life Assurance Company ..	50,353	16,838	33,515
Australian Alliance Assurance Company	4,104	15,022	(a) 10,918
National Mutual Life Association of Australasia ..	1,457,059	647,227	809,832
Victoria Life and General Insurance Company ..	4,035	6,337	(a) 2,302
Colonial Mutual Life Assurance Society	430,881	268,251	162,630
Australasian Temperance and General Mutual Life Assurance Society	478,290	234,376	243,914
Liverpool and London and Globe (Life Branch) ..	2,034	6,731	(a) 4,697
Provident Life Assurance Company	6,818	1,265	5,553
Life Insurance Company	145,383	78,047	67,336
Assurance and Thrift Association Limited	22,802	10,523	12,279
Co-operative Assurance Company(b)	35,453	23,642	11,811
Australian Provincial Assurance	265,768	159,760	106,008
Queensland State Office	204,594	100,697	103,897
Equitable Life Assurance Society	75,129	166,752	(a) 91,623
Mutual Life Insurance Society of New York ..	25,983	63,368	(a) 37,385
New York Life Insurance Society	74,380	130,202	(a) 55,822
Total	9,599,866	5,813,414	3,786,452

(a) Deficiency. (b) Including Industrial.

The figures for the last five years are as follows :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1917 to 1921.

Year.	Receipts.	Expenditure.	Excess Receipts.
	£	£	£
1917	7,293,581	5,478,169	1,815,412
1918	7,715,134	5,377,535	2,337,599
1919	8,172,614	5,698,551	2,474,073
1920	9,037,314	5,330,050	3,707,264
1921	9,599,866	5,813,414	3,786,452

(ii) *Industrial Business.* Returns for the year 1921 for those societies which transact industrial business appear below. The figures for the Prudential, as stated above, are included therein.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1921.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society	715,628	276,903	438,725
Mutual Life and Citizens' Assurance Company ..	412,722	261,852	150,870
Australian Metropolitan Life Assurance Company ..	95,735	57,282	38,453
Colonial Mutual Life Assurance Society	184,985	86,111	98,874
People's Prudential Assurance Company	47,144	29,855	17,289
Aust. Temperance and General Mutual Life Ass. Soc.	722,687	385,567	337,120
Provident Life Assurance Company	32,129	18,177	13,952
Life Insurance Company	12,289	7,173	5,116
Co-operative Assurance Company(a) .. ..	..	..	..
Total	2,223,319	1,122,920	1,100,399

(a) Included in Ordinary.

The figures for the last five years are as follows :—

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1917 to 1921.

Year.	Receipts.	Expenditure.	Excess Receipts.
	£	£	£
1917	1,311,782	748,070	563,712
1918	1,466,077	884,605	581,472
1919	1,674,700	992,974	681,726
1920	1,929,717	1,060,622	869,095
1921	2,223,319	1,122,920	1,100,399

5. Liabilities and Assets, 1921.—(i) *General.* The liabilities of the Australian societies consist mainly of their assurance funds; as already mentioned, however, some of the societies are partly proprietary, and in these cases there is a further liability on account of the shareholders' capital. The assets consist mainly of loans on mortgage and policies, Government, municipal, and similar securities, shares, freehold property, etc. As in some cases the Australian liabilities exceed the Australian assets, it may be pointed out that this table should be read in connexion with the table dealing with assets following the tables appended. Loans on personal security are granted by very few of the Australian societies.

(ii) *Ordinary Business.* The following table shows the liabilities and assets of the societies transacting ordinary life business :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1921.

Society.	Liabilities.			Assets.(c)		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Australian Mutual Provident Society (a)	39,542,629	604,139	40,146,768	13,739,373	23,199,794	36,939,167
Mutual Life and Citizens' Assurance Co.	(b)	(b)	(b)	1,817,606	6,757,035	8,574,641
City Mutual Life Assurance Society ..	1,861,232	119,413	1,980,645	1,114,435	866,210	1,980,645
Australian Metropolitan Life Assurance Company	170,137	1,854	171,991	13,615	158,376	171,991
Australian Alliance Assurance Company	62,256	5,835	68,091	15,198	52,893	68,091
National Mut. Life Assoc. of Australasia	(b)	(b)	(b)	4,833,257	7,011,516	11,844,773
Victoria Life and General Insurance Co.	71,858	8,717	80,575	4,896	75,679	80,575
Colonial Mutual Life Assurance Society	3,071,761	524,557	3,596,318	628,178	2,968,140	3,596,318
Australasian Temperance and General Mutual Life Assurance Society (a) ..	4,033,606	468,798	4,502,404	695,907	3,806,497	4,502,404
Liverpool and London and Globe (Life Branch) .. ..	..	3,558	3,558	(b)	(b)	(b)
Provident Life Assurance Company ..	21,952	56	22,008	456	24,492	24,948
Life Insurance Co.	275,592	173,931	449,523	43,057	406,466	449,523
Assurance and Thrift Association Ltd...	82,124	10,684	92,808	49,122	41,846	90,968
Co-operative Assurance Company (a) ..	118,164	11,706	129,870	15,043	114,827	129,870
Australian Provincial Assur. Assocn. Ltd.	770,574	385,312	1,155,886	57,123	1,147,632	1,204,755
Queensland State Office	256,100	4,475	260,575	27,125	233,450	260,575
Equitable Life Assurance Society ..	..	106	106	132,127	382,851	514,978
Mutual Life Insurance Society of New York	(b)	(b)	(b)	103,964	54,686	158,650
New York Life Insurance Society ..	728,000	9,767	737,767	112,588	29,224	141,812
Total	51,065,985	2,332,908	53,398,893	23,403,070	47,331,614	70,734,684

(a) Including industrial business. As the business of these three societies is mainly ordinary life business they have been included in this table. (b) Not available. (c) Several life offices have a considerable portion of their assets invested outside Australia (see table on the next page).

The next table gives the Australian liabilities and assets for the latest five years available :—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS,
1917 to 1921.

Year.	Liabilities.	Assets.
	£	£
1917	49,465,673	53,673,823
1918	52,867,942	57,469,739
1919	44,141,289	58,905,058
1920	48,829,784	65,162,009
1921	53,398,893	70,734,684

(iii) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society, the Australasian Temperance and General Mutual Life Assurance Society, and the Co-operative Assurance Company, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing ordinary life business only. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shows that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1921.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property etc.	Total.
	£ (b)	£ (b)	£ (b)	£	£	£
Mutual Life and Citizens' Assurance Co.				3,281	5,528,331	5,531,612
Australian Metropolitan Life Assurance Company	155,413	20,096	175,509	2,839	172,670	175,509
Colonial Mutual Life Assurance Society	500,275	1,249	501,524	10,652	490,872	501,524
People's Prudential Assurance Co. (a)	130,329	615	130,944	89,636	41,308	130,944
Provident Life Assurance Company	51,561	..	51,561	676	52,550	53,226
Total	837,578	21,960	859,538	107,084	6,285,731	6,392,815

(a) Including ordinary business. (b) Particulars not available.

(iv) *Total Assets.* It has been thought advisable to restrict the figures relating to life assurance to business in Australia. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin No. 13" (published by this Bureau), and a short table only is inserted here, showing the total assets of the various companies, so that the deficiencies in the Australian assets shown in the previous tables for those companies doing business elsewhere may not be misunderstood :—

ASSURANCE COMPANIES.—TOTAL ASSETS, 1921.

Society.	Assets.	Society.	Assets.
ORDINARY BUSINESS.		ORDINARY BUSINESS—continued.	
Australian Mutual Provident Soc. (a)	47,657,176	Co-operative Assurance Co. (a) ..	129,870
Mutual Life and Citizens' Assur. Co.	10,860,867	Aust. Provincial Assurance Assocn.	1,306,398
City Mutual Life Assurance Society	1,980,645	Queensland State Office ..	260,575
Aust. Metropolitan Life Assur. Co.	171,991	Equitable Life Assurance Society ..	134,857,358
Australian Alliance Assurance Co. ..	68,091	Mutual Life Ins. Society of New York	139,118,172
National Mutual Life Association ..	15,874,608	New York Life Insurance Society	195,782,107
Victoria Life and General Insur. Co.	80,575		
Colonial Mutual Life Assurance Soc.	6,206,674	INDUSTRIAL BUSINESS.	
Australasian Temperance and General		Mutual Life and Citizens' Assur. Co.	5,661,891
Mutual Life Assurance Soc. (a) ..	5,144,904	Australian Metropolitan Life Assur-	
Liverpool & London & Globe (Life) ..	20,191,801	ance Company ..	175,509
Provident Life Assurance Company	130,474	Colonial Mutual Life Assurance Soc.	616,043
Commonwealth Life Insurance Co. ..	449,523	People's Prudential Assur. Co. (b)	130,944
Assurance and Thrift Assocn. Ltd.	93,019	Provident Life Assurance Company	209,077

(a) Including industrial business.

(b) Including ordinary business.

Graphs illustrating the progress of Life Assurance, both Ordinary and Industrial, accompany this chapter.

§ 6. Fire, Marine and General Insurance.

1. **Australian Business.**—(i) *General.* Returns are available showing the revenue and expenditure, assets and liabilities, and investments of 34 insurance companies having their head offices either in Australia or in New Zealand. The names of these companies, with the location of their respective head offices, are given in the following table:—

AUSTRALASIAN FIRE, MARINE, AND GENERAL INSURANCE COMPANIES.

Company.	Head Office.
Australian Alliance	Melbourne
Australian Mutual Fire	Sydney
Australian Provincial	"
Australian Traders'	"
Assurance and Thrift	"
Bankers and Traders'	"
Chamber of Manufacturers	Melbourne
City Mutual Fire	Sydney
Colonial Mutual Fire	Melbourne
Commonwealth General	Sydney
Co-operative	Melbourne
Derwent and Tamar	Hobart
Farmers' Co-operative, New Zealand ..	Christchurch
Farmers and Settlers'	Sydney
Federal Mutual	"
Insurance Office of Australia	"
Mercantile Mutual	"
Manufacturers' Mutual	"
Mutual Fire Insurance Co. of Tasmania ..	Launceston
National of New Zealand	Dunedin
New Zealand Insurance Co.	Auckland
New Zealand State Fire Insurance Office ..	Wellington
New Zealand Government Accident	"
Pacific Insurance Co.	Fiji
Queensland Insurance Co.	Sydney
Queensland State Government	Brisbane
South British	Auckland
Standard of New Zealand	Dunedin
Tasmanian Government	Hobart
United	Sydney
Victoria	Melbourne
Victoria General	"
Victoria State Accident	"
Western Australian Insurance Co.	Perth

(ii) *Revenue and Expenditure.* The accounts given hereunder cover a period from 31st December, 1920, to 30th April, 1922. The most important items of revenue and expenditure are as follows:—

FIRE, MARINE, AND GENERAL INSURANCE COMPANIES.—SUMMARY OF REVENUE AND EXPENDITURE, 1922.

Heading.	Amount.
	£
Premiums, less re-insurances	6,125,445
Losses	3,342,829
Expenses, commission, and taxes	2,180,073
Trade surplus	602,543
Interest, rent, etc.	496,049
Total surplus	1,098,592
Dividends and bonuses paid	450,477
Ratio to premium income of—	%
(a) Losses	54.57
(b) Expenses, etc.	35.59
(c) Trade surplus	9.84

(iii) *Liabilities and Assets.* The liabilities and assets of the 34 offices for the same period are set out in the following tables:—

FIRE, MARINE, AND GENERAL INSURANCE COMPANIES, 1922.

Heading.	Amount.
PAID-UP CAPITAL, RESERVES, AND LIABILITIES.	
	£
Paid-up capital	4,652,348
Reserves and re-insurance funds	5,515,513
Undivided profits	493,388
Losses unsettled	809,354
Sundry creditors, etc.	1,959,083
Dividends, etc., to pay	322,257
Life assurance funds (a)	736,083
Total Liabilities	14,488,026

INVESTMENTS AND OTHER ASSETS.

	£
Loans on mortgage	996,895
Government securities, etc.	7,258,920
Landed and other property	1,881,004
Fixed deposit, etc.	1,455,612
Loans on life policies (a)	17,062
Investments	93,704
Cash and bills received	760,762
Sundry debtors and other assets	2,024,067
Total assets	14,488,026

(a) Some of the companies transact Life Business.

(iv) *Marine Insurance.* Separate returns regarding this branch of insurance are not available. Act No. 11 of 1909, "An Act relating to Marine Insurance," passed by the Commonwealth Parliament, and assented to on the 11th November, 1909, altered the conditions under which marine policies had up till then been issued.

§ 7. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably one-third of the total population of Australia comes either directly or indirectly under their influence. Their total membership is about 500,000, but as certain benefits, such as medical attendance and free medicines, and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by about four to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contribution is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1921.

2. **Number of Societies, Lodges, and Members.**—The number of different societies and lodges, the total number of benefit members at the end of the year, and their average number during the year are shown in the following table:—

FRIENDLY SOCIETIES.—SOCIETIES, LODGES, AND MEMBERS, 1921.

State.	Number of Registered Friendly Societies.	Number of Lodges.	Benefit Members at end of year.	Average No. of Benefit Members during the year.
New South Wales	36	2,085	191,644	187,494
Victoria	56	1,464	143,820	143,421
Queensland	18	588	56,574	56,140
South Australia	18	600	70,155	70,052
Western Australia	15	268	18,945	18,810
Tasmania	19	187	23,266	23,240
Total .. ..	..	5,192	504,404	499,157

With regard to the number of registered Friendly Societies no total is given for Australia, since many of the societies operate in all the States.

3. **Sickness and Death Returns.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shows the total number of members who received sick pay during the year, the number of weeks for which they received pay in the aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members:—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH RETURNS, 1921.

State.	Number of Members who received Sick Pay.	Total Number of Weeks Sick Pay Granted.	Average Number of Weeks per Member Sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1,000 Average Benefit Members.
New South Wales	(a)	(a)	(a)	(a)	(a)
Victoria	27,342	258,549	9.46	1,828	12.75
Queensland	9,218	71,763	7.79	410	7.30
South Australia	12,327	122,472	9.94	927	13.23
Western Australia	3,196	22,401	7.01	121	6.43
Tasmania	4,318	32,746	7.58	314	13.51
Total(b)	56,401	507,931	9.01	3,600	11.55

(a) Not available.

(b) Exclusive of New South Wales.

4. **Revenue and Expenditure.**—(i) *Revenue.* The financial returns are not prepared in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings:—

FRIENDLY SOCIETIES.—REVENUE, 1921.

State.	Entrance Fees, Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£
New South Wales	661,620	142,205	94,556	898,381
Victoria	470,652	157,064	135,315	763,031
Queensland	201,935	53,673	..	255,608
South Australia	210,858	76,854	35,624	323,336
Western Australia	63,953	17,922	15,535	97,410
Tasmania	71,559	13,978	9,984	95,521
Total	1,680,577	461,696	291,014	2,433,287

(ii) *Expenditure.* The returns relating to expenditure are more complete than those relating to revenue. The figures show that the excess of revenue was £546,137 for Australia. The revenue exceeded the expenditure by rather more than one pound per average benefit member.

FRIENDLY SOCIETIES.—EXPENDITURE, 1921.

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members and Members' Wives.	Adminis- tration.	All other Expendi- ture.	Total Expendi- ture.
	£	£	£	£	£	£
New South Wales	222,586	262,269	56,353	137,994	53,936	733,138
Victoria	164,628	194,958	30,492	90,697	80,884	561,659
Queensland	51,660	78,871	19,691	40,085	..	190,307
South Australia	72,264	68,942	29,232	40,367	27,783	238,588
Western Australia	16,375	22,287	3,364	16,549	20,066	78,641
Tasmania	23,610	23,504	15,439	14,483	7,781	84,817
Total	551,123	650,831	154,571	340,175	190,450	1,887,150

It appears from the above figures that sick pay averaged about 22s. per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about 26s. per average benefit member.

5. **Funds.**—The two foregoing tables show that the surplus of revenue over expenditure in five States amounted to £546,137 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shows the division into invested and uninvested funds:—

FRIENDLY SOCIETIES.—FUNDS, 31st DECEMBER, 1921.

State.				Invested Funds.	Uninvested Funds.	Total Funds.
				£	£	£
New South Wales	..	..	..	2,578,937	(a)	2,578,937
Victoria	..	..	..	3,262,069	112,981	3,375,050
Queensland	..	..	..	1,092,993	3,798	1,096,791
South Australia	..	..	..	1,561,668	24,426	1,586,094
Western Australia	..	..	..	304,770	8,361	313,131
Tasmania	..	..	..	276,772	13,749	290,521
Total	..	..	..	9,077,209	163,315	9,240,524

(a) Included in Invested Funds.

The total funds amounted, therefore, to about £18 10s. per member at the close of the year under review.

§ 8. Probates.

1. Probates and Letters of Administration.—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There were in 1921, 38,719 deaths of adult persons, while the number of probates and letters of administration granted during the same period was 15,721. It would therefore appear that about two-fifths of the adults who died during the year were possessed of sufficient property to necessitate the taking out of probate. The details for each State are shown in the table hereunder :—

PROBATES AND LETTERS OF ADMINISTRATION, 1921.

Number of Estates.				Net Value of Estates.		
State.	Probates.	Letters of Adminis- tration.	Total.	Probates.	Letters of Adminis- tration.	Total.
				£	£	£
New South Wales ..	5,461	(a)	5,461	13,895,765	(a)	13,895,765
Victoria ..	4,028	1,741	5,769	12,554,865	(a)	12,554,865
Queensland ..	854	276	1,130	3,469,255	570,124	4,039,379
South Australia ..	1,327	457	1,784	2,909,673	205,433	3,115,106
Western Australia ..	722	337	1,059	1,659,448	194,651	1,854,099
Tasmania ..	421	97	518	1,131,148	76,104	1,207,252
Total ..	12,813	2,908	15,721	35,620,154	1,046,312	36,666,466

(a) Included with Probates.

2. Intestate Estates.—The number of intestate estates placed under the control of the Curator during the year, and the amount of unclaimed money paid into Consolidated Revenue in each State during the year 1921, are given hereunder :—

INTESTATE ESTATES, 1921.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Intestate estates placed under control of Curator during 1921 —							
Number ..	(a)	455	1,280	237	386	259	(b) 2,617
Value .. £	(a)	38,605	481,126	44,919	16,544	32,832	(b) 614,026
Unclaimed money paid into Consolidated Revenue by Curator during 1921	£ 58,670	1,610	9,696	1,703	1,808	..	73,487

(a) Included with Probates.

(b) Exclusive of New South Wales.

CHAPTER IX.

EDUCATION.

§ 1. Evolution of Educational Systems in Australia.

1. Educational Systems of the States.—(i) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume. (See also 2 hereunder.)

(ii) *Educational Systems of other Commonwealth States.* A more or less detailed account of the origin and development of the educational systems of the other States also appears in No. I. and No. II. issues of the Year Book. Later details are given hereunder.

(iii) *Medical Inspection of State School Children.* See Chapter XII. Public Hygiene.

2. Recent Development in State Educational Systems.—(i) *New South Wales.* The year 1913 was an important one in New South Wales educational history, in that it was the first complete year of active operation of the principles laid down in the University Amendment Act and the Bursary Endowment Act of 1912. Further reference to these Acts will be made later on. It was also remarkable for the reorganization of technical education on a Trades School basis, and of the Superior Schools on a vocational basis. Reference may also be made to the development of the Evening Continuation Schools established in 1911, and to the wide extension of the scheme of school medical inspection. The full development of this branch of the Department's activities has been hampered by lack of funds, but the travelling hospitals and travelling dental clinics have proved very popular in the country districts. A school clinic, under the direction of Lecturers in Education from the Training College, was opened in the metropolis during 1918. The object of this institution is to examine and to suggest suitable treatment for children reported by their teachers as showing special disabilities for school work.

As pointed out in a preceding Official Year Book (see No. VII., page 765), the Education Department instituted a scheme of examinations in 1911 for what were termed respectively the "qualifying," "intermediate," and "leaving" certificate. The first "qualifying" examination was held in March, 1911, the first "intermediate" in November, 1912, and the first "leaving" in November, 1913. The successful students who were awarded exhibitions at the leaving certificate examinations took up University studies in the first term of 1914, thus marking the definite linking-up of the State School system with the University. In addition to the above-mentioned certificates the Department also grants superior commercial, junior technical, domestic, and evening continuation certificates.

The provisions of the Public Instruction (Amendment) Act of 1916 have exercised a marked influence on attendance, and in many schools the average exceeds 90 per cent. of the effective enrolment. The average for all schools in 1921 was about 85 per cent., which is considered satisfactory in view of the causes militating against full attendance, such as extremes of dry and wet weather and the usual epidemics of children's diseases.

Reference to recent developments in agricultural education will be found in § 2, 4 (v) hereinafter.

In his Report for the year 1921 the Minister again draws attention to the disabilities under which the Education Department was labouring owing to shortage of teachers and lack of necessary funds for new buildings, equipment, and renovations. It is stated that a sum of £1,500,000 is required for urgent works.

(ii) *Victoria*. Under the Education Act of 1915 it is provided that every child must attend school for the full period of eight years between 6 and 14, unless he be given a certificate of education at 13 or is excused on reasonable grounds. The schools are open on an average 225 days in each year, and require attendance on all these days unless satisfactory explanation is forthcoming. Provision is made for the mentally deficient. The primary curriculum divides the school life into eight grades, so that a child entering at six years of age should have completed the full course by the time he reaches his fourteenth year. After completion of the elementary school course, the pupil may go on to the Evening Continuation Schools, Higher Elementary Schools, District High Schools, or the Trade Schools. Special schools for feeble-minded children have been established in the metropolis, and an "open air" school for delicate children is in operation at Blackburn. There is also a special school for epileptics at Clayton. Highly encouraging results have been obtained at all these institutions. A Council of Public Education has been appointed to advise on educational matters generally, and particularly in regard to co-ordination. Examinations are held throughout the State for the certificate of merit and the qualifying certificate. The former is granted to pupils who, under prescribed conditions, reach a satisfactory standard in subjects prescribed for Grade VIII., while the latter is awarded to pupils who reach a satisfactory standard in Grade VI. Possession of this certificate enables the holder to enter upon the work of the Higher Elementary or the District High School. Acting on the advice of the Council of Education, the Melbourne University has established a Schools Board. The function of this body is to consider all questions relating to school studies and the inspection and examination of schools. In addition to University representation, there are also on the Board representatives of the Department of Education, the registered Secondary Schools, and the business interests of the community. Being with wide powers, this Board must of necessity be the chief guiding factor in the development of education in Victoria. During the year 1915 a considerable amount of attention was devoted to the organization of the elementary schools, especially in connexion with the question of retardation, and in regard to the teaching of infants. It is found that the greater flexibility in organization and system of promotions, coupled with special methods of dealing with backward pupils, tends to lower considerably the retardation percentage. The institution of the uniform school year, the greater powers conferred on the head teachers in regard to the promotion of scholars, the making of the inspector an advisory rather than an examining officer, the better provision for the practical training of the junior teachers, and the inauguration of a system of medical and dental inspection have all been fraught with excellent results. During recent years methods of training teachers have been considerably improved. Formerly there was only one course leading to the trained teacher's certificate. At present four courses are provided—primary, secondary, infant, and short course for teachers of rural schools, and special instruction is provided for in particular subjects.

(iii) *Queensland*. The Amending Act of 1910 introduced several new features into the educational system of Queensland, chief amongst them being—(a) employment of proceeds of sales of land and other school property for school purposes, instead of paying them into Consolidated Revenue; (b) abolition of local contributions; (c) provision of scheme of school certificates to assist in co-ordination of various branches of the system; (d) establishment of compulsory continuation classes; (e) compulsory medical and dental examination; (f) raising the compulsory age to 14 years instead of 12 years; (g) provision for compulsory attendance on every day on which the school is open. The last-mentioned provision has already produced good results in regard to improved attendance. The organization of the general scheme of education is being systematically developed. State High Schools were inaugurated in February, 1912, and a more liberal scheme of scholarships to secondary schools came into force in 1913, while further amendments were made in 1914, 1915, and 1918. Rural schools, giving training in useful manual arts, together with elementary agricultural science, date from 1917. (See § 2, 4 (v)). A Teachers' Training College has been established, and greater attention is being given to the development of technical education. Methods of instruction have been brought into consonance with the latest developments, under the new syllabus adopted in 1914. During this year also the medical and dental inspection of State School children were considerably extended. Reference to the system adopted in connexion with the choice of entrants to the teaching profession will be found in § 2, 6.

(iv) *South Australia.* The chief features of the year 1921 were (a) the issue of a new course of instruction for primary schools, and (b) the inception of new methods in regard to the training, examination, and classification of teachers. With respect to (a), the course of instruction was compiled by a body consisting of about twenty selected teachers, the inspectors, and the members of the Curriculum Board in conjunction with the Superintendent of Primary Education and the Director. The new syllabus shortens the time spent by an average child in the primary schools from eight to seven years, and is designed to show the scope and nature of the studies and the character of the training for each of the seven grades. A special syllabus has been compiled for the small one-teacher schools. In regard to (b), the scheme aims at providing better trained and educated teachers, especially for the country schools. (See also § 2, 6, hereinafter.)

Methods of inspection have been revised with the idea of affording more scope and freedom to the teacher, and permitting the inspector, while not neglecting fundamentals, to give more time to advising and helping in the attainment of satisfactory results.

In order to provide increased facilities for more advanced education in country districts, sixteen higher primary schools were established in 1921 in rural towns.

Attention is being given to the establishment of separate infant schools wherever possible, in order to overcome retardation and secure higher efficiency in the lowest grades, and twenty-two separate infant schools are now in operation.

A Correspondence School was established in 1920 to meet the needs of children living beyond the reach of existing educational agencies, and this provided for the needs of upwards of 300 children in 1921.

All recently built schools conform to the latest approved principles in regard to orientation, lighting, and furniture, while the conversion of older buildings is being taken in hand so far as funds permit.

(v) *Western Australia.* During 1912 the curriculum of the Primary Schools was remodelled in order to bring it into line with the most up-to-date principles. The work was lightened in directions where experience showed there was overloading, and efforts were particularly directed toward the removal of the abstract and to the development of the imaginative and constructive throughout all grades. Greater freedom was given for experiment by the teacher, and it is recognized that considerable improvement has resulted. Montessori principles are being increasingly adopted in the teaching of the youngest children. Constructive work is receiving greater attention in all departments, and encouragement is given to original or research work of an elementary character. Four special courses—commercial, industrial, domestic, and professional—have been established at the central schools. These schools are practically day continuation schools designed to carry on the education of boys and girls beyond the primary stage. Continued efforts are being made in the direction of bringing about a closer correlation between primary and secondary education. The Modern School at Perth was opened in 1911, and in June, 1914, a Goldfields High School was opened at Kalgoorlie. There is also a High School at Northam and District High Schools are in operation at Geraldton, Albany, and Bunbury, while it is proposed to establish additional schools at the larger country centres, and in the meantime to grant scholarships at the existing High Schools to country children. During 1917 a medical officer for schools was appointed under the Public Health Department. Legislation passed in 1919 made compulsory the education of blind, deaf and dumb children, either at home or in special institutions.

A further revision of the curriculum was made in 1920, mainly with the object of removing superfluities, and devoting greater attention to the formative side of education. Special attention is being given to the problem of dealing with feeble-minded children. The experiment was tried in Perth during 1920 of grouping these children in classes at the central schools and giving them instruction in handwork and domestic science coupled with a modified curriculum in the ordinary school subjects. Results were so satisfactory that it is hoped to extend the system to other centres.

During 1921 twelve special rural schools were established at which the curriculum embraces practical instruction in various rural industries for boys, and in domestic economy, fruit preserving, etc., for girls.

(vi) *Tasmania.* During the last few years educational effort in Tasmania has been directed to the development on modern lines of the primary system, the foundation of secondary schools, and the provision of a satisfactory system of training for teachers.

Kindergartens, Montessori Schools, and Model Country Schools have been established as adjuncts to the training system, and the courses have been remodelled with a view to providing trained teachers for secondary as well as for primary work. At the High Schools, secondary, commercial, and industrial courses have been established. School hygiene has received especial attention, doctors and nurses have been appointed, and two dental clinics have been established. During the year 1918, regulations were framed with the object of establishing separate infant departments under trained mistresses. Several have already been established, and it is proposed to open additional schools of this type as opportunity offers. Provision has been made for an extension of the system of teaching by correspondence for children in isolated districts. Improvements effected in the system of training teachers are alluded to later on. During 1921, after collaboration with the various grades of the teaching service, the inspectors, and the Principal of the Training College, the syllabus of instruction was remodelled to bring it into closer relationship with present day methods. Special attention was given during this year to the problem of the retarded and sub-normal child. Classes have been established to deal with pupils who from natural defects or other disabilities are unable to keep pace with the ordinary classes in the schools, and a special teacher has been attached to the Training College staff to instruct students in methods of dealing with the problem. Classes dealing with mothercraft and child-welfare have been established by the Child Welfare Clinic in connexion with the principal city schools. Steady progress is being made with the work of replanning the older schoolrooms to bring them into accord with modern requirements.

(vii) *Northern Territory.* Although the number of children of school age in the Territory is small, nevertheless ample provision has been made by the Commonwealth Government for their education. State schools are in operation at Darwin, Parap, Pine Creek, Alice Springs, and Emungalan. There is also a school for aboriginal and half-caste children at Kahlin Compound, Darwin. A satisfactory standard is maintained at the schools, but progress is somewhat retarded by irregular attendance. In January, 1922, a High School was opened at Darwin. The head master of the Darwin School makes periodical visits of inspection to the other schools.

(viii) *Present Position of State Education in Australia.* Throughout Australia primary education is compulsory and free, while there exists in all States a more or less liberal provision of scholarships and bursaries to the Higher State Schools, to the Secondary Schools, and to the Universities. Provided that the requisite standard is reached, it is, of course, permissible for children to receive home tuition, or to attend so-called private schools. The orientation, lighting, and ventilation of school buildings are being modernized. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are now better developed, and although the "pupil teacher" system with its effects have not been wholly eliminated, it appears to be gradually vanishing. (The methods adopted in the various States for the selection and training of teachers are described in some detail in § 2, 6, hereinafter.) There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, music, drawing, business practice, and domestic economy have received a general impetus. Greater attention has been given to the scientific classification of children. Moreover, as will be seen from the above, and from § 2, 4, the State Education Departments are increasing their activities in the direction of secondary education. Lastly, the system of inspection has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime, the primary duty of this officer consists in guiding and directing the teaching in accordance with approved methods. [See also § 6, Technical Education.]

(ix) *Co-ordination of Educational Activities.* As pointed out already, the educational system of New South Wales may now be considered as a more or less homogeneous entity, the various stages succeeding one another by logical gradation from kindergarten to university. In the other States development is proceeding on somewhat similar lines, activity in this respect being greatly helped by Inter-State conferences of directors of education and of inspectors and teachers.

§ 2. State Schools.

1. **General.**—The State Schools, or, as they are sometimes termed, the “public” schools, of Australia comprise all schools directly under State control, in contradistinction to the so-called “private” schools, the bulk of which, though privately managed, nevertheless cater for all classes of the community. Separate information regarding Technical Education is given in § 6.

2. **Returns for Year 1921.**—(i) *General.* The following table shows the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1921 :—

STATE SCHOOLS.—RETURNS, 1921.

State or Territory.				Schools.	Teachers.(a)	Scholars Enrolled.	Average Attendance.
New South Wales(b)	..	..		3,213	9,425	295,962	251,376
Victoria	..	..	..	2,425	6,888	230,027	180,100
Queensland	..	..	..	1,625	4,116	128,225	99,152
South Australia	..	..	..	983	2,656	79,769	63,808
Western Australia	..	..	..	710	1,877	53,277	45,739
Tasmania	..	..	..	483	1,149	31,530	26,145
Northern Territory	..	..		6	9	252	178
Australia	..	..	..	9,445	26,120	819,042	666,498

(a) Exclusive of sewing mistresses.

(b) Including Federal Territory.

Unfortunately, the schemes of enrolment and of the computation of “average attendance” are not identical in each State, so that the comparisons are imperfect.

(ii) *Schools in the Federal Capital Area.* During the year 1921 fourteen State Schools were in operation in the Federal Capital Territory (Yass-Canberra). The pupils enrolled numbered 401 and the average attendance 277. Cost of upkeep in 1921 amounted to £5,072. By arrangement with the Federal Government these schools are conducted by the New South Wales Education Department on the same lines as the ordinary State Schools, the Department being recouped for expenditure.

3. **Growth of Enrolment and Attendance.**—The enrolment and average attendance at the State Schools in Australia are given below for the years 1891, 1901, 1911, and for each year of the period 1917 to 1921 :—

STATE SCHOOLS.—ENROLMENT AND ATTENDANCE.—AUSTRALIA, 1891 TO 1921.

Year.	Total Population (a)	Enrolment.	Average Attendance.	Year.	Total Population (a)	Enrolment.	Average Attendance.
1891 ..	3,421	561,153	350,773	1918 ..	5,082	779,687	612,174
1901 ..	3,825	638,478	450,246	1919 ..	5,304	782,317	608,069
1911 ..	4,573	638,850	463,799	1920 ..	5,412	801,405	632,182
1917 ..	4,983	764,980	600,089	1921 ..	5,510	819,042	666,498

(a) At 31st December, in thousands.

The decline in attendance noticeable in 1919 was chiefly due to the epidemic of influenza which particularly affected the attendance returns for New South Wales.

4. **Distribution of Educational Facilities.**—(i) *In Sparsely-settled Districts.* It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways:—(a) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum: (b) When there are not enough children to form a provisional school, what are known as Half-time Schools are formed, the teacher visiting them on alternate days: (c) In still more sparsely-peopled districts, an itinerant teacher goes from house to house within a certain radius. Thus, in Queensland during 1921 the 17 itinerant teachers' districts covered 545,000 square miles of country, while a distance of 64,355 miles was travelled in visiting 1,889 children. In this State also the Education Department has established what are known as Saturday Schools, in which small groups of children in outlying districts are visited by the nearest teacher on Saturdays and receive the benefit of several hours' instruction. These schools, of which there are ten, have been warmly welcomed in the districts in which they are established, inasmuch as under this system the children "outback" receive a greater amount of instruction than is possible under the system of itinerant teachers. Provision has been made for a vocational "top" to be established at schools in important distributing centres of inland pastoral areas in Queensland, and special classes receive instruction in manual work, commercial work, and domestic economy. Itinerant teachers capable of imparting instruction in domestic and manual work have also been appointed to visit parents and children at various localities in the Central District. Further, in New South Wales, Victoria, South Australia, Western Australia and Tasmania parents in the thinly-peopled areas are allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. In some cases the Department also provides the building. During 1921 subsidy was paid to 680 schools in New South Wales, Victoria had 16 schools of this type, Western Australia 23, and Tasmania 44: (d) Several "travelling" schools have been established in New South Wales, the teacher being supplied with a van carrying a tent for himself and one for use as a school, together with books and apparatus for primary teaching. South Australia has devised attractive portable schools to meet the needs of new districts and temporary settlements. Railway Camp Schools are established in some States on the sites of extensive railway works: (e) New South Wales, Victoria, South Australia, Western Australia, and Tasmania provide also for education, by correspondence, of children in localities not at present reached by the methods outlined above. At the end of 1921 upwards of 1,000 children were on the rolls of the three Correspondence Schools in New South Wales. In Victoria, about 200 invalid and isolated children were receiving instruction by this means. In South Australia it is stated that the children of one family are 400 miles from the nearest school. Another family of four is 320 miles distant from a school, and several families live along the camel tracks in the far north. The Port Augusta School supervises the work of twelve children living along the East-West railway line. In 1920 a special Correspondence School, staffed with five teachers, was opened in Adelaide, and at the end of 1921 over 300 children were on the roll. A library has been established in connexion with the school, and the books are much appreciated by both parents and children "outback." The enrolment in correspondence classes in Western Australia during 1921 was 534. There are nine teachers attached to the Correspondence School in Hobart, and a visiting teacher tours the whole island, calling, as far as possible, at all the isolated dwellings.

It was proposed to initiate a system of postal tuition in Queensland early in 1922.

(ii) *Centralization of Schools.* The question of centralization of schools adopted so successfully in America and Canada has received some attention in Australia, and particularly in New South Wales. It is recognized that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less highly trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, and in 1921 a sum of £36,150 was expended in boarding allowance and conveyance to central schools. Cost of conveyance to elementary schools in Victoria during 1920–21 was returned as £6,680. In South Australia the sum of £623 was disbursed in 1921 in connexion with travelling expenses of school children.

(iii) *Evening Schools.* Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales the 46 Evening Continuation Schools had an effective enrolment of 3,697 and an average attendance of 2,770 in 1921. The schools for boys are classed as commercial, commercial preparatory, junior technical, and junior technical preparatory, and for girls as domestic, and domestic preparatory. Attendances at the schools for boys numbered 2,339, and at those for girls 531, the total showing an increase of 819 over that for 1920, and being the highest recorded in the history of these schools. In Victoria there was only one night school and one evening continuation school in operation during 1921, the average attendance being 26 and 65 respectively. Although the Education Act in Victoria gives authority for the establishment of evening continuation classes at which the attendance of boys up to the age of seventeen years and living within a radius of 2 miles may be made compulsory for six hours a week, considerations of expense have prevented the free exercise of this power. Evening Continuation Schools have been established under regulation in South Australia, and are intended principally to help the working boy to improve his general education and to add to the store of knowledge most useful in his present work. Western Australia has evening continuation classes in 25 centres; the enrolment in 1921 numbered 2,939.

(iv) *Higher State Schools.* (a) *New South Wales.* In New South Wales, public schools which provided advanced courses of instruction for two years for pupils who have completed the primary course were classed as Superior Schools. These were reorganized in 1913 as Day Continuation Schools, and divided into Superior Commercial Schools, Superior Junior Technical Schools, and Superior Domestic Schools for Girls. During 1921 there were 87 schools of this type in operation, of which 15 were in the Commercial group, 26 in the Junior Technical, and 46 in the Domestic group, with an average attendance of 6,636 in the sixth and seventh classes. It is believed, however, that greater efficiency could be produced by reducing the number of these schools and establishing Central "Superior Public Schools" instead. Provision has also been made for the more advanced education of children in country centres by the establishment of 13 District Schools. These schools, which in 1921 had an average attendance of 812, are specially staffed, and, in addition to the usual work, undertake the preparation of students for admission to the training colleges. Composite Courses were given in 1921 at 57 country schools, Course A leading to the intermediate certificate, B to the commercial superior public school certificate, and C preparing for the public service entrance examination. The average attendance at these courses was 1,281. In addition, there are 27 High Schools in the State. These had an average weekly enrolment in 1921 of 7,730, with an average attendance of 7,175. To meet the wishes of representatives of the registered Secondary Schools, the syllabus of the High Schools was amended in 1913, and now offers such a wide range of choice in the selection of subjects that there is no possibility of producing a merely stereotyped uniformity of study. To meet the growing demand for High School education in the metropolis and in country centres, Intermediate High Schools were established, and in 1921 the number had increased to 25, with an average attendance of 4,061. In accordance with Departmental regulations, there is a liberal distribution of scholarships and bursaries to the higher State Schools and to the University. During the last quarter of 1921 over 1,000 pupils holding bursaries were receiving instruction at High, Intermediate High, and District Schools. Under the provisions of the University Amendment Act of 1912, 200 exhibitions were awarded in 1921 to successful students at the leaving certificate examinations, 110 of these being given to State School pupils and 90 to students from registered secondary schools. The principal faculties which absorbed these exhibitioners were Arts, 62; Medicine, 39; Law, 27; Engineering, 20.

The Sydney Grammar School (not a "State" School in the ordinary acceptance of the term), which receives a State endowment of £1,500 a year, had, in 1921, an enrolment of 623 pupils, and an average attendance of 552.

(b) *Victoria.* In Victoria, action was taken in January, 1912, to give effect to the provisions of the Education Act of 1910, with regard to the decentralization of the system of secondary education. Thirty-nine Higher Elementary and 31 District High Schools have been established, and, to obviate congestion at the High Schools, Higher Elementary Classes are carried on at 15 "Central" Schools. The enrolment on the 31st December, 1921, at the Higher Elementary Schools was 3,486, of whom 1,731 were girls, at the

District High Schools 6,980, of whom 3,401 were girls, while 1,173 boys and 1,280 girls were receiving secondary teaching in the Central Schools. The qualifications for admission to the High Schools and Higher Elementary Schools are that pupils shall be not less than 12 years of age, shall possess the qualifying certificate or its equivalent, and that their parents shall undertake that the children will remain at school for four years. For the first two years there is a common course for all pupils, thereafter replaced by four special courses:—(1) A preparatory professional course for pupils preparing to proceed to the University, to enter the teaching profession, or to gain a sound general education; (2) an agricultural course to be taken in Agricultural High Schools; (3) a commercial course; and (4) a domestic arts course for girls. Parallel with these courses an industrial course has been developed for pupils who intend to enter upon some form of industrial occupation.

The demand for places in the metropolitan High Schools is in excess of the available accommodation, and although the "Central" Schools, already referred to, have to some extent relieved the congestion, increased provision is urgently needed.

In the Junior Technical Schools pupils are enrolled at 12 and 13 years of age for a course extending over three years designed to qualify for entrance to the Senior Technical Schools. There were 20 of these junior schools in operation at the end of 1921 with a net enrolment of 3,110 pupils.

Schools of Domestic Arts have been established—three in Melbourne, one in Ballarat, and one in Bendigo. At these institutions, in addition to continuing their general education, the girls receive special instruction in cookery, needlework, and various home duties. A modified course in domestic arts is given to senior pupils at Maryborough and Castlemaine.

Scholarships granted by the Department are as follows:—(a) One hundred junior, tenable for four years at a District High School or approved Secondary School, with allowance of £26 per annum for board when required; (b) Forty senior, tenable three to six years, with allowance of £40 towards expense of course at University; (c) Fifty junior technical, giving free tuition for two years at a Junior Technical or other approved school, and, in certain cases, board allowance of £26 per annum; (d) Fifty-five senior technical, giving free tuition for approved courses at Technical schools, with £30 allowance for day students, and £10 for night students; (e) Four senior technical, available for two to three years, with allowance of £40 towards expenses of a course in architecture, engineering, or science at the University; (f) Sixty teaching, similar in other respects to junior; (g) Twenty nominated courses, giving four to six years' free tuition in agriculture, mining, or veterinary science at the University, with allowance in certain cases of £26 per annum.

(c) *Queensland.* Prior to the year 1912, Queensland did not possess any distinctly secondary schools under State control, but in February of that year High Schools were opened at Warwick, Gympie, Bundaberg, Mount Morgan, Mackay, and Charters Towers. Tuition at these schools is free, but students must pass a qualifying entrance examination. Three courses of study—General, Commercial and Domestic, are provided. The General Course leads up to the University, and students will be able to matriculate from the High Schools. In 1917 and 1920 High Schools were opened at Gatton and Roma respectively. High Schools ranking in all respects with those mentioned are also conducted at Brisbane Central Technical College and at the Technical Colleges at Toowoomba and Rockhampton, and "The Brisbane Junior High School" was opened in 1920. In smaller centres where an average of not less than 25 qualified pupils can be obtained, secondary tuition is provided at existing State Schools, and this has been arranged for at Herberton, Childers, Dalby, Kingaroy, Pittsworth, Southport, Cairns, Wynnum Central, and Emerald. The enrolment at High Schools in 1921 was 2,145, and the daily attendance 1,511. There are, moreover, ten Grammar Schools—six for boys and four for girls—each of which was subsidized by the State to the extent of £750 per annum, and in addition received a payment of £250 per annum for providing five scholarships for State scholars. Owing to representations regarding increased cost of maintenance, the grants to the Grammar Schools for boys and girls in Brisbane were raised to £3,500 and £2,000 respectively in 1921, and in the case of the remainder of these Schools the grant was raised to £1,500 each. The Government also pays *per capita* fees in payment for the tuition of state scholarship-holders in attendance at the Grammar Schools. The enrolment at the Grammar Schools in 1921 was 1,964 and the average attendance 1,649. Since the year 1909 these schools have been regularly examined by the inspectors of the Education Department.

Under the amended scheme of scholarships to Secondary Schools which came into force in 1914, all candidates who gained 50 per cent. of marks at the previous December examination were eligible for free scholarships tenable for three years at an approved Secondary School. Provision was made for board allowance of £30 per annum where necessary, and of £12 where the holder lived at home. In 1915 the tenure was altered to two years, with the proviso that, if the holder at the end of that period obtained an approved pass at the University Junior Examination, an extension scholarship of two years was granted, and, in addition, an extension at the end of the fourth year where an approved pass at the Senior University Examination was obtained. The extension scheme came into force in 1917. In 1918 the tenure was extended to two years and a half in order to afford better preparation for the work prescribed by the University for the Junior Public Examination.

As a result of the 1921 examinations, held in April, scholarships were awarded to 751 boys and 486 girls. Of the successful candidates 268 were granted the allowance of £12 per annum, and 76 received the allowance of £30.

Prior to the establishment of the Queensland University, three exhibitions per annum to approved Universities were granted. These have been replaced by twenty scholarships to the local University. Each scholarship is tenable for three years, and carries an allowance of £26 per annum if the holder lives at home and attends the University, or £52 per annum board allowance where necessary. In addition to these "open" scholarships, twenty "teacher" scholarships are granted to students who undertake to enter the teaching profession. These carry an allowance of £66 where the students live away from home, and £39 to those who live at home.

(d) *South Australia.* Including the Adelaide High School, there were altogether 22 High Schools open in South Australia in 1921, with an enrolment of 3,211, an average attendance of 2,860, and a staff of 124 teachers. In addition to giving secondary education, these institutions form a valuable source from which the Department can draw a supply of young teachers. Sixty qualifying exhibitions to these schools are open to pupils who have completed the primary course, 50 of such exhibitions being reserved for country children. The exhibitions are of the value of £10 each, with an additional allowance of £20 per annum if it is necessary for the holder to live away from home.

The Department has also established 16 Higher Primary Schools in order to provide increased facilities for higher education to country children. These schools cover the first and second years' work at the High Schools, and students who complete this work may compete for 24 junior exhibitions tenable for three years at a High School.

Pupils from the High Schools may compete for 12 bursaries tenable at the University, the School of Mines, or the Roseworthy Agricultural College. The bursaries carry exemption from fees, with an allowance of £20 per annum, which may be increased to £40 if the bursar is living away from home.

(e) *Western Australia.* In 1921 the Perth Modern School, the Eastern Goldfields High School, and the High School at Northam provided courses up to the leaving certificate standard, and the District High Schools at Geraldton, Bunbury, and Albany provided a three years' course up to the junior certificate standard. The schools at Albany and Bunbury will shortly rank as full High Schools. In addition, there are "Central" Schools in which the upper classes are collected from various contributory schools in the surrounding district. These supply:—(a) A Professional Course lasting three years leading to the junior certificate of the Public Examination Board. (In the Perth Central Schools classes leading up to the Leaving Certificate and Matriculation, thus covering the High School course, have also been established.): (b) A Commercial Course of three years: (c) An Industrial Course lasting two years: (d) A Domestic Course of two years for girls. Altogether 2,896 pupils were taking these courses, and if to this number the 642 children enrolled in the Commercial and Professional Courses at the large country towns be added, the total enrolments amount to 3,538. The Perth Modern School and the Eastern Goldfields High School had an enrolment in 1921 of 383 and 201 students respectively. Entrants to State secondary schools must have passed an examination identical with that for Secondary School scholarships, and boarding allowance up to £30 per annum is provided where necessary. Evening continuation classes were attended at 25 centres in 1921 by about 2,900 pupils. The classes are intended to provide some measure

of higher education to those who leave school as soon as they reach the compulsory age of 14 years. Admission to these classes is free, but pupils must attend regularly three evenings a week. Evening Schools are held in various parts of the State, but the work carried on is mainly primary.

Fifty scholarships tenable for three years (with possibility of extension to five years) at approved Secondary Schools are annually offered for boys and girls attending Government or other efficient schools. Ten carry an allowance of £20 per annum, and the remainder entitle the holders to receive a grant for books and travelling expenses. Boarding allowance up to £30 per annum may also be granted where necessary. Thirty-three bursaries of the value of £5 each tenable for two years were also granted in 1921. Scholarships to enable children from country districts to attend at District High Schools or the Narrogin School of Agriculture were inaugurated in 1917. Only those children who must live away from home are eligible, and the tenure may in some cases be extended to five years. The scholarships carry an allowance of £30 per annum. During 1921, 35 District High School Scholarships, and 11 tenable at the Narrogin School of Agriculture were awarded. Thirteen scholarships also were awarded in 1921 to children of fallen or disabled soldiers. The scholarships are tenable for three years, and, where necessary, carry an allowance of £30 per annum.

(f) *Tasmania.* Up to the year 1912 the Department confined its efforts to the provision of primary education for the school children in Tasmania. In 1911, however, super-primary classes were formed in the larger schools, with an enrolment in 1911 of 200, and in 1912 of 400 pupils. It was recognized, however, that the previously existing scheme of scholarships and exhibitions was inadequate to meet the demands for higher education. High Schools were therefore opened in January, 1913, at Hobart and Launceston, and later on at Devonport, Burnie, and Huonville. The enrolment and average attendance at the five High Schools in 1921 were 819 and 770 respectively. These provide for five classes of pupils—(i) Those who desire to become teachers; (ii) University students; (iii) Commercial; (iv) Mechanics; (v) Home duties (girls). The full secondary course covers five years. Under the Bursaries Act of 1915 five junior city bursaries tenable for three years at a State or registered Secondary School and carrying allowances up to £16 were awarded, also seventeen junior bursaries for country children with allowances up to £46, and six for children in country schools of the fourth to the seventh class with allowances up to £46 tenable for three years. Four senior city and twelve senior country bursaries tenable for two years and with allowances up to £46 were also awarded in 1921.

(v) *Agricultural Training in State Schools.* (a) *New South Wales.* Allusion was made in the preceding issue of this work to methods of agricultural training in vogue in the State Schools in New South Wales. (See Year Book 15, page 735.) During 1921 the whole subject of agricultural education was revised, and, under a Supervisor of Agriculture, a definite course of scientific and practical instruction has been evolved. This course is now being taken at the residential schools at Hurlstone and Yanco, and it is proposed to establish similar schools in other parts of the State. The necessary number of teachers to initiate the work has been provided, and students will be trained at the University to meet future requirements. Proposals are under consideration for the establishment also of (1) an Agricultural Continuation School in the metropolis, giving a two years' course in elementary agriculture to boys unable to attend a High School, and a course in domestic science and horticulture for girls; (2) Rural Schools, giving a course in elementary agriculture, nature study, and farm mechanics for boys, and domestic science and horticulture for girls; and (3) re-organization of Rural Camp Schools.

(b) *Victoria.* In Victoria, what are termed Agricultural High Schools have been established at Ballarat, Colac, Leongatha, Mansfield, Mildura, Sale, Shepparton, Wangaratta, Warragul, and Warrnambool. Pupils must be at least fourteen years of age, and have passed beyond the curriculum of the elementary school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. The schools are practically secondary schools with an agricultural bias, and form a link between the rural school and the agricultural college. They are also used as a preliminary stage in the education of boys and girls who wish to become teachers and eventually graduate in the State Training College and the University. At some of the schools short courses in agriculture have been instituted for farmers' sons who have left school. A local council

is appointed for each school, and exercises a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of Agriculture reports and gives advice on the teaching of agriculture in the State Schools. A fair number of teachers have gained diplomas in agriculture, and are capable of giving practical instruction at the High Schools. Schools of Agriculture are conducted by the Agricultural Department at the State Research Farm, Werribee. Teachers in the wheat-growing districts are also instructed for short periods by the organizing Inspector of Agriculture at the University, and their services are utilized as leaders or group supervisors in their districts. The elementary principles of agriculture are taught in a large number of State Schools, and progress has been made in the direction of establishing agricultural clubs and home-project organizations. A Horticultural Society has been established, with a number of schools in affiliation, while practical help in school gardening is afforded by the departmental supervisor. The Society has a nursery and distributing centre for plants and seeds at Oakleigh, and sub-nurseries have been established at various schools.

(c) *Queensland.* In Queensland the Government provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Excellent experimental work has been carried out at some of the schools, and gardens have been established wherever circumstances permitted. Several of the schools, with their surroundings of well-grown shade and ornamental trees, make attractive spots in the country landscape. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing and dairy-farming methods generally, and the subject is now added to the programme of instruction in several of the dairying districts. The practical advice and help given has resulted in many instances in marked improvement in the dairy herds. At Nambour, a Rural School, the first of its type, was opened early in 1917. In addition to the ordinary subjects of the curriculum, this school provides for instruction in farming, fruit growing, dairying, etc., with dress-making, millinery and cookery for girls, and woodwork, leatherwork, and tinsmithing for boys. Training in business methods, shorthand and typewriting is also available. Supplies of trees for distribution to other schools are raised at Nambour, and many schools distribute trees and plants for home planting. In view of the success of this institution, schools of somewhat similar type have been established at Boonah, Gracemere, and Marburg, and it is proposed to add to their number when funds permit.

(d) *South Australia.* In South Australia the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work. Assistance is given by personal visits as well as by correspondence, and by instruction at vacation Summer Schools. Teachers in training receive instruction in Nature knowledge and the art of conducting Nature Studies. A seed wheat competition amongst school children inaugurated in 1911 proved very successful, a second, which was commenced in 1916, concluded in 1920, and a third in 1921. In 1919 two of the competitors who entered on the work of wheat-breeding produced wheat of such quality that they were unable to supply the orders for seed grain received from South Australia, as well as from other States. Milk-testing is carried out in several schools, and the agricultural training generally is greatly helped by the practical co-operation of the farmers.

At the end of 1921 a Forest Camp School was held in the Kuitpo forest, the scholars receiving practical training in forestry and allied subjects.

(e) *Western Australia.* In Western Australia an advisory teacher of nature study visits the schools and gives advice in regard to proper methods in horticulture and experimental agricultural work. The number and usefulness of the gardens and experimental crops attached to State Schools show marked improvement each year. Special attention

is being given to the needs of the country schools, and as far as possible the instruction is given a practical bias. In some districts definite projects are undertaken of importance to a rural community, *i.e.*, vegetable growing, bee-keeping, and pig and poultry keeping. The boys are also trained in useful manual work, and the girls, wherever possible, are taught simple cookery, and the drying and preserving of fruit and vegetables. Twelve special rural schools have been established in different parts of the State, and the project system has as far as possible been made portion of the curriculum. Early in 1914 a school was opened on the Narrogin State Farm. The pupils are taken directly from the primary schools, and the course of instruction lasts for two years. On its completion students are qualified to enter on the diploma course at the University. The school was brought under the control of the Education Department in 1921, and has so justified its existence that it cannot accommodate all the applicants for admission. At present 40 students are accommodated, but 60 will be taken in 1922, and, later on, 80. Provision has been made for practical work in agriculture at the High School at Northam.

(f) *Tasmania.* In Tasmania the organizing teacher of nature study visits and advises the teachers at the State Schools, and also gives addresses and model lessons at the schools of instruction. Considerable success has attended the establishment of classes in Hobart for instruction in apple-grading and packing, and similar classes have been formed at several other centres.

5. **Teachers.**—The distribution of the teaching staff in the State Schools during the year 1921, including teachers of needlework, was as follows:—

STATE SCHOOLS.—TEACHING STAFF, 1921.

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mis- tresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales ..	2,172	1,250	1,703	4,172	10	118	169	3,885	5,709	9,594
Victoria ..	1,597	1,064	535	1,814	300	1,578	395	2,432	4,851	7,283
Queensland ..	891	723	596	1,382	166	358	..	1,653	2,463	4,116
South Australia ..	382	578	274	977	132	313	125	788	1,993	2,781
Western Australia..	340	360	226	758	24	169	76	590	1,363	1,953
Tasmania ..	189	286	60	323	45	246	6	294	861	1,155
Northern Territory	2	6	..	1	..	..	..	2	7	9
Total ..	5,573	4,267	3,394	9,427	677	2,782	771	9,644	17,247	26,891

The figures for principal teachers include mistresses of departments, while students in training colleges have been grouped with assistants.

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in some of the States. The pupil teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next sub-section.

In New South Wales attention has recently been drawn to the difficulty of securing an adequate supply of teachers, particularly male teachers for small schools in out-back districts.

6. **Training Colleges.**—The development of the training systems of the various States has been alluded to at some length in earlier issues of the Year Book. The present position is as follows:—

(i) *New South Wales.* During 1921, the total number of students in training was 925, of whom 383 were taking the twelve months' course for rural teachers or assistants.

and the balance the various courses up to five years, and the special courses arranged in accordance with departmental requirements. Practically all accessible metropolitan schools are used as practice schools for giving training-college students opportunity to acquire practical skill in teaching. Formerly the limits of accommodation at the College were responsible for the employment in the schools of a number of untrained juniors, but during recent years teachers entering the service have at least six months' professional training. The Principal of the College is also Professor of Education at the University. Members of the College staff are afforded opportunities of visiting foreign countries on study leave. In addition to the help and advice afforded by the inspectorial staff, teachers in rural districts receive the advantage of tuition by lectures and correspondence from members of the Training College staff. The Department also arranges for schools of instruction in various subjects during vacations.

(ii) *Victoria*. During recent years the educational and professional attainments of the general body of teachers in Victoria have steadily improved. Prior to the establishment of the High Schools, the pupil or junior teachers were recruited from the ranks of those who had obtained the Merit Certificate in the eighth grade of the elementary schools, and the acquirement of the necessary literary qualifications for promotion was greatly hindered by the circumstance that they were engaged in teaching for the greater portion of the day. Under present conditions, candidates spend at least two years in a High School, and consequently enter on their professional duties with a better mental and physical equipment. A number of High School pupils after serving as junior teachers for a year are awarded studentships at the Training College. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was reopened on February, 1900, with an enrolment of 57 students. During the year 1921 the students in training numbered 250, of whom 169 were women. A Correspondence class has been formed for country teachers desirous of qualifying for the Infant Teacher's Certificate. The students at the Hostel receive training in domestic economy. Three city and six country practising schools are attached to the Training College, and four infant rooms with attached kindergartens have been specially equipped for the training of infant teachers. The University High School gives secondary teaching practice to both departmental and private students. Three courses of training are provided for at the College, i.e., for Kindergarten or infant teachers, for primary teachers, and for secondary teachers.

(iii) *Queensland*. The great majority of the teachers in Queensland originated in the pupil-teacher system, under which the beginner, at the age of fourteen or thereabouts, was placed in charge of a class, his efforts being to some extent supervised by the head teacher or senior assistant. In addition to the strain involved in teaching, the neophyte had to prepare notes of lessons, and to study for the annual examinations. Under the present system, twenty scholarships to the Training College are awarded annually to candidates who obtain approved passes at the University Junior Examination. The scholarships have a currency of $2\frac{1}{2}$ years, and carry a living allowance. In addition, 43 appointments as student teachers were made on the result of approved passes, and the selected candidates receive academic and professional training under the head teachers of the schools to which they are appointed.

At the Training College the students receive tuition in teaching methods, as well as in ordinary scholastic subjects, while practice in teaching is gained at the Central Practising School, at the Buranda Boys' and Girls' School, and at the Kangaroo Point Infants' School. The Principal of the Brisbane High School supervised the work of a certain number of students in their practical course at the end of the year. During 1921 there were 78 students in training at the College, including 24 University students, 17 teacher students, and 37 taking the short course for rural teachers. Teachers of small schools are also greatly helped by the inspectors' practical and theoretical instruction in the various districts, while the Central Technical College gives correspondence lessons to small-school teachers desirous of passing the Class III. examination. Schools of instruction for the untrained teachers of rural schools are conducted by the inspectors in their respective districts.

(iv) *South Australia.* In 1920 the scheme for the training of teachers was remodelled. The new system is based on three fundamental principles. (1) That the candidate should have completed his ordinary education—at least up to the standard of the Junior Public Examination—before entering on the professional course. (2) That he should complete his professional course before being permitted to teach. (3) That in order to secure uniformity, the various courses should be controlled by one person, instead of several, as was formerly the case. The remodelled courses came into operation in January, 1921, and are arranged to give the necessary academic and professional training as follows:—(a) Short course (one year) for the less important positions in primary schools and for teachers of Class VII. schools: (b) Primary Course (two years) for the more important positions in primary schools: (c) Kindergarten and Sub-Primary Course (two years) for positions as infant teachers: (d) Secondary Course (three to four years) for High School teachers: (e) Commercial Course (two years) for teachers of Commercial Subjects. (f) Domestic Arts Course (two years) for teachers of Domestic Arts: (g) Woodwork Course (one year) for Teachers of Woodwork. The total number of students in 1921 was 325. Practical work in teaching is carried out at six Practising Schools, for primary, rural, and infant teachers, and at selected schools of other kinds for secondary teachers, and teachers of special subjects. In order to provide an adequate supply of qualified students, provision is made for the award of 150 scholarships annually, tenable at a High School. These scholarships entitle the holder to one or two years' education at a High School beyond the Junior Public stage, with an allowance of £40 per annum for boys and £30 for girls, and a boarding allowance of £20 per annum if students live away from home. The new scheme of inspection, while providing for a measure of examination to test progress in fundamentals, gives the inspector a greater opportunity to estimate the general value of the teacher's work and to give advice and assistance where needed. Special evening or Saturday morning classes of instruction are held by the inspectors in their districts, while during 1921 four Schools of Instruction were conducted by inspectors and attended by sixty teachers from rural schools.

(v) *Western Australia.* A Training College for teachers was opened at Claremont in 1902. The original building provided accommodation for 60 students, but extensions were opened in 1908, and the number in training in 1921 was 155. Of the long-course students, 34 were in the first year, 38 in the second year, and 5 in the third year. The remaining 78 were taking the one year's course for teachers of country schools, except 3 graduates, who were taking a special course of one year. A fair proportion of the full-course students attend lectures at the University, and some remain for a third or fourth year to complete degree work. In addition to the ordinary schools at which teachers gain professional experience, special practising schools have been established for the proper training in teaching and managing the smaller country schools. The standard for entry into the teaching profession has been considerably raised during recent years. Formerly young people were taken at the age of fourteen years from the primary schools and appointed as "pupil" teachers. At present the probationary teachers or monitors must be seventeen years of age, and are expected to possess a good secondary education. After a short period of probation they enter the Training College for special professional training. University graduates receive a special course of one year's duration. Untrained applicants are appointed only when the supply of trained teachers is insufficient. The teachers in the metropolis are greatly helped by periodical conferences of inspectors and teachers, while in rural areas demonstration lessons are given by inspectors at convenient centres. Teachers in isolated areas are assisted by the correspondence classes.

(vi) *Tasmania.* During 1917 the scheme for the training of teachers was recast and grouped in four divisions:—(1) A short course to supply the professional training required for the less important positions in the primary schools and for teachers of the smaller provisional and Sixth Class schools: (2) Training of infant teachers: (3) Training for positions in the larger primary schools: (4) Training of high school teachers. Practical training for the various classes is given in well-equipped practising schools and in model small schools. The inspectors hold schools of instruction for teachers of small schools, and teachers of moderate attainments are also helped by the Correspondence School. The enrolment at the Training College in 1921 numbered 123.

7. *Expenditure.*—(i) *Maintenance.* The net expenditure on maintenance in all grades of schools, excepting technical schools, and the cost per head of average attendance, for the five years ended 1921 are shown below. The figures do not include expenditure on buildings, which is given separately in a subsequent table.

STATE SCHOOLS.—EXPENDITURE ON MAINTENANCE, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Total.
TOTAL.								
	£	£	£	£	£	£	£	£
1917	1,662,658	1,033,876	562,418	295,261	319,954	115,547	1,594	3,991,308
1918	1,748,221	1,098,060	567,296	308,423	336,852	125,572	1,668	4,186,092
1919	1,971,209	1,127,962	618,007	342,907	348,694	142,097	2,027	4,552,903
1920	2,668,060	1,325,149	917,314	403,768	394,931	182,822	2,763	5,894,807
1921	3,227,245	1,615,882	999,868	452,364	464,136	230,131	2,607	6,992,233

PER HEAD OF AVERAGE ATTENDANCE.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1917	7 9 10	6 3 5	6 7 5	5 4 0	7 15 11	4 15 1	8 11 5	6 13 0
1918	7 14 10	6 10 10	6 15 6	5 3 4	7 17 3	5 1 11	8 9 4	6 18 5
1919	9 5 2	6 9 10	6 13 6	5 14 10	7 19 2	5 13 4	10 19 2	7 9 9
1920	11 7 5	7 15 6	9 13 11	6 11 0	8 15 0	7 3 5	12 1 4	9 6 6
1921	12 16 9	8 19 5	10 1 1	7 1 9	10 2 11	8 16 0	10 12 11	10 9 10

As the figures show, the cost per head of average attendance has grown considerably during the quinquennium. This increase is due to the greatly enhanced cost of materials and equipment, and to the higher salaries paid to the teaching staff to meet the increased cost of living and also to make the service more attractive. For New South Wales the expenditure on salaries rose from £1,589,000 in 1919 to £2,188,000 in 1920, and to £2,659,000 in 1921. In Queensland the increase in 1920 was largely due to additional salaries and allowances—amounting to about £286,000—paid to teachers in consequence of awards of the Industrial Arbitration Court, while the further increase in 1921 was mainly accounted for by heavier cost of salaries and allowances. Increased salaries and allowances also were chiefly responsible for the high average cost in Western Australia for the year 1921 as compared with previous years.

(ii) *Buildings.* Expenditure on school buildings in each of the years quoted was as follows :—

STATE SCHOOLS.—EXPENDITURE ON BUILDINGS, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Total.
	£	£	£	£	£	£	£	£
1917	208,733	116,010	78,080	44,311	21,034	21,667	253	490,088
1918	238,434	62,532	94,323	40,299	16,540	8,883	252	461,263
1919	265,174	87,273	94,603	41,974	24,579	23,897	650	538,150
1920	370,412	131,266	138,985	28,907	26,851	19,406	..	715,827
1921	293,420	176,099	67,490	64,885	70,533	53,059	..	725,486

(iii) *Total.* The net total cost during the year 1921 was as follows :—

STATE SCHOOLS.—NET TOTAL COST, 1921.

Item.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Total.
	£	£	£	£	£	£	£	£
Net cost of education, including buildings ..	3,520,665	1,791,981	1,067,358	517,249	534,669	283,190	2,607	7,717,719

The figures in this and the preceding tables refer to all grades of State schools (with the exception of technical schools), and include evening schools. Including buildings, the net cost per scholar in average attendance for the whole of the State schools in Australia amounted in 1921 to £11 11s. 7d. as compared with £4 9s. 3d. in 1901.

8. School Savings Banks.—Returns show that these institutions are in existence in three States. In New South Wales, there were 847 banks at the end of 1921, the deposits amounting to £67,670, and withdrawals to £67,300. Since the establishment of the banks in 1887, deposits totalled £822,316, and withdrawals £804,119. Of the latter sum the withdrawals of accounts of £1 and upwards for deposit in the Government Savings Bank as children's individual accounts amounted to £161,304. In South Australia, 653 schools had 35,665 depositors, with £42,025 to their credit; and in Western Australia, there were 498 school banks, with 36,390 depositors and £56,906 to their credit.

§ 3. Private Schools.*

1. Returns for 1921.—The following table shows the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1921 :—

PRIVATE SCHOOLS, 1921.

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales	677	4,069	78,460	64,172
Victoria	486	2,063	59,922	(a)50,900
Queensland	175	1,071	26,145	21,905
South Australia	166	793	15,633	11,575
Western Australia	122	511	11,813	10,461
Tasmania	69	327	6,650	5,017
Northern Territory	1	2	65	43
Total	1,696	8,836	198,688	164,073

(a) Estimated.

The totals for New South Wales include returns from the Sydney Grammar School, which receives a yearly State subsidy of £1,500, and which, in 1921, had an enrolment of 623, and an average attendance of 552.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls, with an enrolment of 1,143 boys and 821 girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. The total Government aid received in 1921 was £17,979, of which the Brisbane Boys' and Girls' Grammar Schools received £3,500 and £2,000 respectively, and the others about £1,500 each. The Grammar Schools are inspected annually by officers of the Department of Public Instruction.

* Private schools include all schools not wholly under State control. The term "private," though popularly applied, is of course a misnomer.

2. Growth of Private Schools.—The enrolment and average attendance at Private Schools during 1891, 1901, and in each year of the period 1917 to 1921 are as follows :—

PRIVATE SCHOOLS.—ENROLMENT AND ATTENDANCE, 1891 TO 1921.

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891	124,485	99,588	1918	190,999	151,590
1901	148,659	120,742	1919	193,115	145,630
1911	160,794	132,588	1920	192,093	156,083
1917	177,126	144,409	1921	198,688	164,073

The comparatively small rate of increase in private school enrolment and attendance is due in large measure to the development of the State educational systems, especially as regards the provision of secondary education. The heavy decline in attendance figures for the year 1919 was accounted for chiefly by the smaller attendance in New South Wales schools resultant on the influenza epidemic.

3. Registration of Private Schools.—Until recent years the various State Governments had comparatively little control over privately conducted schools. With the advance of modern educational thought the position is improving, but still leaves much to be desired. It is evident that without a thorough system of registration there will always be a difficulty in regard to enforcing the compulsory clauses of the various Education Acts. Moreover, advanced educational thought demands complete supervision, not only of curricula, but of all matters pertaining to school hygiene.

In New South Wales, under the provisions of the Bursary Endowment Act of 1912, non-State Schools are inspected by the departmental Inspector of Secondary Education for registration or renewal thereof. Under the compulsory clauses of the amending Public Instruction Act of 1916, children between the ages of 7 and 14 years must attend schools certified as efficient by the Minister. Provisional registration is granted to applicants pending inspection by Government officers. School proprietors must conform to prescribed conditions in regard to the hygiene, etc., of their buildings, and supply the requisite returns.

In Victoria, a registration scheme has been established under a special committee consisting of nine members of the Council of Education, and all Private Schools must be registered. The Minister of Education is also empowered to authorize the inspection of any school (other than a State School) in order to ascertain whether the instruction given is satisfactory. The inspector of registered schools has pointed out that the Registration Act has had the effect of improving the school buildings as well as the methods of instruction. Since 1914, the improvement of existing buildings has been enforced where necessary, while full requirements have been insisted on in the case of additions or new buildings.

In Queensland, with the exception of the Grammar Schools, which are now examined annually, there is practically no control over the private schools, beyond the fact that they may submit themselves to inspection if so desired. No provision is made under the Education Act for the furnishing of returns.

In South Australia there is no compulsory registration of schools or teachers, but all instruction must be given in the English language, and monthly and annual returns of attendance forwarded to the Department of Education.

In Western Australia, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department. Returns of attendance must be furnished monthly and quarterly.

In Tasmania all private schools must be registered with the Teachers and Schools Registration Board. Prior to registration by the Board teachers must produce evidence of fitness to teach. Annual returns of attendance are required.

§ 4. Free Kindergartens.

The following information regarding Free Kindergartens has been compiled from particulars supplied by the principals of the chief institutions or the organizing secretary in each State, except in the case of Western Australia, the details for which were furnished by the Education Department.

FREE KINDERGARTENS, 1922.

State.	No. of Schools.	Average Attendance.	Permanent Instructors.	Student Teachers.	Voluntary Assistants.
New South Wales (Sydney)	12	630	19	65	15
Victoria (Melbourne) ..	25	1,152	50	34	250
(Ballarat) ..	1	37	2	21	..
Queensland (Brisbane) ..	6	300	7	13	1
South Australia (Adelaide)	7	294	8	30	1
Western Australia (Perth)	4	45	6	..	..
Tasmania (Hobart) ..	3	112	5	3	..
(Launceston) ..	2	78	1	5	7
Total	60	2,648	98	171	274

In New South Wales there were 113 students at the Kindergarten Training College, of whom 65 were taking the ordinary course, 38 the course for Sunday School teachers, and 10 were attending special classes. At the Melbourne College, 11 second-year and 23 first-year students were in training. The Brisbane Training College had 13 students in training during 1922, the Training College at Adelaide 30, and at Perth 21. There is no training college at Hobart, but the free kindergartens are used as practising schools in connexion with the Kindergarten Association.

It must, of course, be distinctly understood that the information given above refers to institutions under private kindergarten unions or associations, and is exclusive of the kindergarten branches in the Government schools of the various States.

§ 5. Universities.

1. **Origin and Development.**—(i) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal Assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when 24 candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. The passing of the University (Amendment) Act of 1912 marks an important epoch in the development of the educational system of New South Wales. The Act aims at placing the University in a more effective position as the culminating point in a thoroughly co-ordinated system of State education, and it is claimed that the passing of this measure made the educational system—from the Primary Schools through the Secondary Schools to the Technical Colleges or to the University—form a progressive and continuous whole. More extended reference to this Act and to the liberal scheme of exhibitions provided thereunder for scholars from the State and Private Schools was given in Official Year Book No. 15, page 745. At the inception of the University there were only three professorships. The present staff consists of 30 professors, 7 associate and 2 assistant professors, and 148 lecturers and demonstrators. There are in addition, 15 honorary lecturers, as well as 82 miscellaneous assistants in laboratories, and 3 curators of museums. The library and administrative staff numbers 27.

(ii) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent, issued in 1859, its degrees are, like those of the Sydney institution, declared of equal status with those of any other University in the British Empire. Women

students attended lectures for the first time in 1881. The University, which began in 1855 with schools of Arts and Law, has now a staff of 24 professors, 75 lecturers and demonstrators, and 134 various assistants. The Conservatorium of Music has a staff numbering 40.

(iii) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 14th March, 1911, when 60 students were matriculated. Provision has been made for a Correspondence Study department in connexion with the institution, and at the request of the Brisbane branch of the Workers' Educational Association weekly lectures are given in History and Economics. At the present time there are 8 professors, with 12 independent lecturers, 5 assistant lecturers and demonstrators, and 3 miscellaneous assistants. The Correspondence department had 152 students on the roll in 1921.

(iv) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress were largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting to over £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognized as of equal distinction with those of any University in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of 16 professors, 91 lecturers and demonstrators, and 49 miscellaneous assistants, while the staff at the Conservatorium, not included in the foregoing figures, numbers 22.

(v) *University of Western Australia.* The University of Western Australia was established under an Act which received Royal assent on the 16th February, 1911, and the first Senate was appointed on the 13th February, 1912. The University was opened in March, 1913. There are now 10 professors, in addition to 20 lecturers and demonstrators and 11 miscellaneous assistants. The Chair of Agriculture was endowed by Sir Winthrop Hackett. Associates of the Perth Technical School or the Kalgoorlie School of Mines may, under prescribed conditions, obtain a reduction in period of attendance for the B.E. degree, and students from the School of Mines may be admitted to the examinations and take portion of their course at the University.

(vi) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th of December, 1889. At the present time the institution, which is small but efficient, possesses a staff of 7 professors, 11 independent lecturers, and 1 assistant lecturer and demonstrator. Under Statutes the Zeehan School of Mines and Metallurgy and the School of Mines and Industries at Mount Lyell were affiliated to the University.

2. **Teachers and Students.**—The following table shows the number of professors and lecturers, and the students in attendance at each of the State Universities during the year 1921 :—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1921.

University.	Professors.	Lecturers and Demon- strators.	Students attending Lectures.		
			Matriculated.	Non- matriculated.	Total.
Sydney	39	163	2,753	564	3,317
Melbourne	24	75	..	..	2,476(a)
Queensland (Brisbane)	8	17	245	71	316
Adelaide	16	91	794	539	1,333(b)
Western Australia (Perth)	10	20	325	28	353
Tasmania (Hobart) ..	7	12	127	41	168

(a) Exclusive of 178 music students. (b) Exclusive of 588 music students.

Students at the Conservatorium of Music have been excluded in the case of Melbourne and Adelaide. The Conservatorium in Sydney, while attached to the Education Department, is not under the control of the University.

3. **University Revenue.**—The income of the Universities from all sources during the year 1921 was as follows :—

UNIVERSITIES.—REVENUE, 1921.

University.	Government. Grants.	Fees.	Private Foundations.	Other.	Total.
	£	£	£	£	£
Sydney	129,512	41,731	59,543	2,713	233,499
Melbourne	38,912	71,578	7,690	5,834	124,014
Queensland (Brisbane)	16,400	7,422	11,402	573	35,797
Adelaide	34,860	20,171	36,063	588	91,682
Western Australia (Perth)	15,000	2,957	660	1,757	20,374
Tasmania (Hobart)	12,690	2,784	845	185	16,504

The extent to which the older-established Universities have benefited by private munificence will be apparent from the following table :—

UNIVERSITIES.—BENEFACTIONS.

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ..	276,750	Sir Samuel Wilson ..	30,000	Sir Thos. Elder ..	98,760
Sir P. N. Russell ..	100,000	James Stewart ..	25,624	Sir Langdon	
Thos. Fisher ..	30,000	Hon. Francis Ormond	20,000	Bonython ..	40,000
Hugh Dixon ..	8,050	John Hastie ..	19,140	R. Barr Smith	
Edwin Dalton ..	8,000	Robert Dixon ..	10,837	and family ..	21,150
J. F. Archibald ..	7,135	John Dixon Wyse-		Sir W. Hughes ..	20,000
Hon. Sir W. Macleay	6,000	laskie ..	8,400	Family of John	
Mrs. Hovell ..	6,000	David Kay ..	5,764	Darling ..	15,000
Thos. Walker ..	6,200	Cuming Smith & Co.		Mrs. G. A. Jury	12,000
Other donations ..	59,868	Ltd. ..	5,250	Hon. J. H. Angas	10,000
		Subscribers, Ormond		Other donations	29,168
		Exhibition in Music	5,217		
		Sir J. M. and Lady			
		Higgins ..	5,200		
		Mr. and Mrs. F. Knight	5,000		
		Henry Dwight ..	5,000		
		Wm. Thos. Mollison ..	5,000		
		Other donations ..	88,428		
Total ..	508,003	Total ..	238,860	Total ..	246,078

The figures quoted above for the Sydney University relate to actual cash, and are exclusive of the munificent bequest by the late Hon. Sir Samuel McCaughey, M.L.C., of property producing an annual income of £15,000 to be applied to the general purposes of the University. In addition to the sum of £6,000 shown above, the Hon. Sir W. Macleay also presented the Museum of Natural History to the University of Sydney. The column "Other Donations" for Melbourne University includes portion of the sum of £49,000 raised by special appeal in 1920.

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1921, the Challis Fund amounted to nearly £326,000, and the Fisher bequest to over £40,000. The cash balance at the end of 1921 on account of all private foundations to Sydney University stood at £597,846. In the case of Melbourne University the Stewart fund on the 31st December, 1921, stood at £30,461, the Hastie at £19,262, and the Dixon fund at £15,736.

In addition to the above there were various other bequests to Sydney University—*e.g.*, collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, the Hon. Francis Ormond's benefactions to Ormond College amounted to about £108,000. With a view to advancing the cause of education in agriculture, forestry and allied subjects, Mr. Peter Waite transferred to the Adelaide University in 1914 the whole of the valuable Urrbrae estate at Glen Osmond. The estate comprises 134 acres of land with a fine mansion. In 1915, he presented the estate of Claremont and part of Netherby, comprising 165 acres, adjoining Urrbrae, while in 1918 he transferred to the University 5,880 shares in a public company to provide funds to enable the University to utilize the land for the purposes intended. Private benefactions to the University of Tasmania and the University of Queensland amount to about £5,000 and £37,000 respectively. In connexion with the latter, the trustees of the Walter and Eliza Hall Trust have endowed fellowships in engineering, economic biology, and pure and applied chemistry. The bequest by the late Sir Samuel McCaughey amounted in 1921 to £15,660, and a gift of £10,000 by the British Red Cross Society was used to create a Research Chair in Medical Psychology. The trustees also provided a Veterinary Science Research Fellowship at Melbourne University. In Western Australia the chair of Agriculture was founded by an endowment of Sir Winthrop Hackett, first Chancellor of the University, who made available also an annual sum of £900 for the establishment of a Department of Agriculture.

4. **University Expenditure.**—For the year 1921 the expenditure by the Universities under various headings was as follows :—

UNIVERSITIES.—EXPENDITURE, 1921.

University.	Salaries and Adminis- tration.	Scholar- ships, Bursaries, etc.	General Main- tenance.	Buildings and Grounds.	Other.	Total.
	£	£	£	£	£	£
Sydney	116,505	6,499	41,510	30,722	15,815	211,051
Melbourne	79,877	8,914	8,116	9,606	22,306 ^(a)	128,819
Queensland (Brisbane) ..	20,466	3,047	6,650	1,639	2,139 ^(d)	33,941
Adelaide	38,506	1,103	1,008	38,191	13,984 ^(b)	92,792
Western Australia (Perth)	15,398	148	300	..	6,403 ^(c)	22,249
Tasmania (Hobart) ..	10,493	938	264	689	3,762	16,146

(a) Includes £11,222 laboratory and research expenditure.
research.

(c) Includes £2,070 laboratory and research.

(b) Includes £7,300 laboratory and
(d) Laboratory and research.

5. **University Extension.**—Extension lectures were instituted at Sydney University in 1886, and in 1892 a Board was appointed which receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The Board also arranges for courses of lectures in other States. In 1921 provision was made for fourteen courses, the lectures being given in part at the University, and in part in various suburban and country districts.

Evening tutorial classes open to both matriculated and unmatriculated students have been established in various centres in accordance with the University Amendment Act of 1912. Fifty-six of these classes, attended by about 1,300 students, were in operation during 1921. Thirty of these classes were held in the metropolitan area, and twenty-six in country districts.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. A joint committee composed of representatives from the Extension Board and the Workers' Educational Association respectively controls the organization of tutorial classes. The Board also arranges for advising country students by correspondence on social and cultural subjects. Attendance at extension lectures in 1921 numbered 2,712, and at the tutorial classes 392.

As pointed out previously, a correspondence study department has been inaugurated in connexion with the University of Queensland in order to overcome, as far as possible, the difficulties of students who desire to benefit by University teaching, but who for various reasons are unable to attend the lectures. Over 150 students are on the roll. In addition, 10 public lecturers, and 3 intra-mural courses were given in Brisbane, and 19 lectures in country towns, while 8 classes were conducted in Brisbane for members of the Workers' Educational Association, and 2 study circles in the country were supplied with copies of lectures in industrial history.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. Attendance at tutorial classes and lecture courses in 1921 amounted to 400.

In Western Australia provision has been made for the giving of courses of extension lectures in Perth and suburbs, and also—by arrangement with local committees—in country centres. The professor of agriculture visits the chief farming districts for the purpose of giving lectures to, and holding conferences with the primary producers. Special short courses for farmers are given at the University. Short courses of popular lectures are also given in the evening by various professors at the University.

In 1919 the University Extension Board which had previously controlled the work of providing extra-mural tuition was replaced by the Committee for Tutorial Classes. The Professor of Economics is director of tutorial classes, and conducts one class annually. There are also lectureships for the northern and west coast districts. Attendance at the classes in 1921 numbered 129.

6. Workers' Educational Association.—In 1913 Workers' Educational Associations were formed in all the States of Australia and later in New Zealand. The movement has for its object the bringing of the University into closer relationship with the masses of the people and thereby providing for the higher education of the workers in civic and cultural subjects. The work of the Association is gaining in popularity year by year, and the growth of the movement has been phenomenal. The Government of New South Wales at first granted the University of Sydney the sum of £1,000 to initiate a scheme for tutorial classes. There are now direct grants from all State Governments except Western Australia, and an additional University grant in New Zealand. The particulars of grants for classes are as follow:—New South Wales, £5,650, 56 classes; Victoria, £2,250, 22 classes; Tasmania, £2,105, 17 classes; South Australia, £1,600, 12 classes; Queensland, £1,000, 8 classes. The total number of students throughout Australia is approximately 4,000, the greater number of whom are taking three-year courses while working at their daily occupations. An analysis of these occupations showed that the great majority of the students were wage-earners. The principal subjects chosen in all States are Industrial History, Economics, Political Science, and Sociology, but there is an increasing number of classes in other subjects such as History, Psychology, Philosophy, Literature, Music, Physiology, and Biology. Each University co-operates with the W.E.A. in the formation of a joint committee which appoints tutors and generally supervises the work with the assistance of a University officer with the title of Director of Tutorial Classes. In addition to the longer and more serious courses, a great many preparatory classes, study circles, and summer schools are organized by the Association, numerous courses of public lectures are delivered, educational conferences promoted, and an extensive book service is spreading educational literature throughout Australia. A strong feature of the work of the Association is the organization of a number of country branches to carry facilities for higher education to districts in which these have hitherto been lacking. This work has been particularly successful in New South Wales, Victoria, and Tasmania. In New South Wales the Association organized an important representative conference on "Trade Unionism in Australia" in 1915, the report of which has been issued in book form. Another conference on the "Teaching of Sex Hygiene" was held in 1916, the report

of which has passed through two large editions. A Commonwealth Conference held at Adelaide in 1918 resulted in the formation of a federal organization now known as "The Workers' Educational Association of Australia." Its central office is in the Education Department, Melbourne. The Federal Council co-ordinates the activities of the W.E.A. in all States, and has inaugurated a series of publications on sociological and economic subjects. It also publishes "The Highway," a monthly magazine now in its fifth year, which contains notes on the movement and general discussions on educational work.

§ 6. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary forms of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australia is comparatively small. The question of apprenticeship is referred to in the chapter dealing with "Manufacturing Industries."

2. **New South Wales.**—Some account of the origin and development of technical education in New South Wales was given in Official Year Book No. 15, page 750, but considerations of space preclude its repetition in this issue. It may be noted, however, that technical education had its origin in this State in 1883, but it was not until the year 1913 that a definitely co-ordinated scheme was adopted. The branch Technical Colleges, with the exception of those at Newcastle and Broken Hill, were then superseded by Trade Schools, admission to which was restricted to those actively engaged in the trade concerned, and was dependent also on the possession of a certain degree of preparatory knowledge. Courses of instruction in which workshop experience is not necessary to train the efficient worker—such as Art, Science, and Commercial Courses—are, however, open to all students who have the requisite preliminary knowledge. Advisory committees were appointed for each trade or group of trades. The first two or three years' course of instruction is given in the Trade Schools, of which there are ten, and students may then go on for a further two or three years' advanced teaching at the Technical Colleges, of which there are three, one at Sydney, one at Newcastle, and one at Broken Hill. The higher courses embrace instruction in advanced trades' work qualifying for the position of manager or foreman, but no attempt is made to train for the professional standing. It is hoped, however, that the scheme will develop so that part of the graduates may proceed to the University. Admission to the higher courses will eventually be restricted to those who have either graduated in the Trade Schools of the Department, or who evidence possession of a similar standard of knowledge. In addition to the courses given in the Technical Colleges and Trade Schools, elementary instruction has been provided at various centres where there has been a demand for it, and provision has been made also for special courses of instruction by correspondence. A liberal scheme of scholarships has been provided for students passing from the day or evening Junior Technical Schools or Domestic Science Schools, to the Trades and Science Schools, as well as scholarships to the University at the close of the diploma course.

As the existing accommodation both at the Central College and the suburban Trade Schools was found to be quite inadequate, a beginning was made in 1921 with the work of providing increased facilities for technical education in the metropolis by remodelling the premises formerly used as the Darlinghurst Gaol. The necessary alterations will involve a sum of £36,650.

The table below gives some idea of the development of technical education in New South Wales during the five years 1917 to 1921:—

TECHNICAL EDUCATION.—NEW SOUTH WALES, 1917 TO 1921.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Individual Students.	Number of Lecturers and Teachers.	Fees Received.
						£
1917 ..	544	15,065	11,072	8,401	354	9,354
1918 ..	572	15,986	12,156	8,717	369	9,422
1919 ..	557	14,580	10,949	7,827	379	9,416
1920 ..	638	18,119	13,808	9,258	406	12,701
1921 ..	636	18,974	..	9,696	402	12,641

Attention has recently been drawn to the necessity for a Vocational Bureau to make provision for effectively placing in the various industries boys and girls leaving school. At present many of the students at the Technical Colleges are anxious to be apprenticed, but there is a difficulty in bringing the interested parties together.

During the year 1921 the Department continued to train large numbers of returned soldiers at the Central Technical College and various Trade Schools in the metropolitan area, and at the branch Technical Colleges at Newcastle and Broken Hill. The numbers are, of course, decreasing as the men become absorbed into different industries, the total under training at the end of 1921 being 1,174.

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. Fine work was also done at the School of Mines in Bendigo, and later on excellent courses of training were evolved at the Working Men's College in Melbourne. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. Prior to 1910 the whole of the schools were under the control of local councils, but in the year mentioned the control passed to the Education Department. At the end of 1921 there were 25 Technical Schools receiving State aid. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction in a large number of technical subjects, is also a School of Mines. During 1921 the classes in operation numbered 180, and the average enrolments per term averaged 2,600. In addition, 230 students were receiving vocational training for the Repatriation Department. Such institutions as the Swinburne Technical College, and the Ballarat and Bendigo Schools of Mines, have also an extensive curriculum embracing the more important industrial subjects. There are now 20 Junior Technical Schools in existence, giving a two or three years' course of instruction to boys between the ages of 12½ and 15 years, thereby preparing them for the more advanced teaching in the higher schools.

Particulars regarding the growth of technical education in Victoria during the last five years are given in the appended table:—

TECHNICAL EDUCATION.—VICTORIA, 1917 TO 1921.

Year.				Number of Classes.	Number of Enrolments.	Average Attendance.	Fees Received.
							£
1917	..	..	..	106	12,139	8,736	18,836
1918	..	..	..	110	13,300	9,119	19,044
1919	..	..	..	110	12,785	9,102	18,351
1920	..	..	..	115	14,174	10,548	29,132
1921	..	..	..	116	15,105	10,663	25,831

Considerably more than 2,000 returned soldiers have received the advantages of vocational training, and the staff and councils of the various technical schools have taken great interest in the work of teaching and finding employment for qualified trainees.

4. **Queensland.**—Up to the passing of the "Technical Instruction Act of 1908," technical education in Queensland was controlled by local committees, the State simply providing financial aid. Under the provisions of this Act, the State took over the technical colleges at Brisbane, South Brisbane and West End, and formed therefrom a Central Technical College. By an amending Act in 1918, power was taken to assume the control of other technical institutions, and in 1919 the colleges at Toowoomba and Rockhampton came under departmental control. During 1921 there were seventeen technical colleges in operation, while classes in technical subjects are held in a number of smaller centres. Preparatory Day Trade Schools were established at Ipswich and Brisbane in 1916, and Domestic Science Day Schools at Brisbane and Ipswich in 1915, and at Townsville in 1918. A certain amount of technical and vocational work is also provided for at the Rural Schools. (See § 2, 4 (v.c.)). Several itinerant Domestic Schools have been opened to meet the needs of districts where the population is not sufficient to warrant the establishment of permanent classes, and these institutions have been very successful. Vocational

training for returned soldiers has been provided in Brisbane and at various country centres. The progress of technical education since 1917 is shown in the following table :—

TECHNICAL EDUCATION.—QUEENSLAND, 1917 TO 1921.

Year.	Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
					£
1917	388	9,632	7,800	310	15,274
1918	421	9,900	8,500	295	14,851
1919	423	9,864	(a) 8,000	348	11,364
1920	509	11,863	(a) 9,000	377	13,074
1921	522	11,993	(a) 9,500	372	13,882

(a) Estimated.

Greater attention is being devoted to the development of trade classes, and the Technical College authorities have been assisted by the University professors in the preparation of a properly organized system of Trade instruction. Compulsory attendance at technical classes in various districts has been provided for by industrial awards, the decisions so far—with the exception of Printing—being confined to trades connected with Engineering and Metal Working. Under the scheme inaugurated in 1920, there is a Central Apprenticeship Committee and Group Apprenticeship Committees, which exercise oversight over apprenticeship matters and submit recommendations as to conditions to the Arbitration Court.

5. **South Australia.**—Prior to the year 1917 the condition of affairs in regard to technical education in Australia was regarded by the Education Department as unsatisfactory. There was a School of Mines and Industries in Adelaide, and in addition Schools of Mines at Moonta, Port Pirie, Kapunda, Mount Gambier, and Gawler. While the Government bore the bulk of the cost of maintenance of these institutions, they were controlled by independent councils, and there was no regular co-ordination in regard to staffs, curriculum, etc. A Director of Technical Education was appointed in 1916, and the reorganization of the system was thereupon undertaken. The position in 1921 was, however, still unsatisfactory, as the control of technical education in the State rested with two bodies, (a) the Council of the South Australian School of Mines and Industries, whose activities are confined to the metropolitan area; and (b) the technical branch of the Education Department, which deals with schools in the metropolis, as well as throughout the country districts. During the year, an amending Act dealing with the technical education of apprentices was passed, and, by proclamation, the scope of the original Act was widened so as to include over 150 separate trades. Regular meetings of the Apprentices Advisory Board were held, and improvements in conditions of apprenticeship were made on their recommendation. Since the opening of the classes formed in June, 1919, 707 apprentices and probationers have been enrolled. The enrolments in the five country technical schools in 1921 numbered 1470.

The work of training returned soldiers is now drawing to a close, and of the 1,270 enrolments in the technical classes only 32 remained at the end of 1921.

Particulars regarding the position of technical education in the State during the five years 1917 to 1921 are given hereunder :—

TECHNICAL EDUCATION.—SOUTH AUSTRALIA, 1917 TO 1921.

Year.	Number of Classes.	Enrolments.	Average Attendance.	Number of Teachers.	Fees Received.
					£
1917	195	6,273	5,307	105	3,974
1918	169	5,927	4,760	127	4,393
1919	207	6,819	4,453	134	4,177
1920	358	11,304	8,424	200	5,161
1921	357	10,499	7,187	183	5,713

6. **Western Australia.**—A Technical School was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909, and the remodelled institution was opened in 1910. The school is affiliated to the University, and provides instruction for evening students in first year University work in mathematics, physics, and chemistry, and second year work in mathematics and chemistry. Full time day classes in engineering are provided for pupils who have passed through the Junior Technical School, and the Midland Junction Railway Workshops recruit their apprentices largely from these classes. There are branch institutions at Midland Junction, Fremantle, Claremont, Kalgoorlie, Boulder, Geraldton, Bunbury, Collie, Coolgardie, and Albany. In addition, Continuation Classes are held at various centres. The schools are all under the control of the Education Department, the officer entrusted with the supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. Advanced work at present is taken only in Perth, Fremantle, Boulder, and in Kalgoorlie by the School of Mines, the other branches dealing almost entirely with preparatory work, chiefly in Continuation Classes.

In 1918 a vocational training committee was formed to superintend the training of returned soldiers, and some 2,000 men were interviewed and advised by the Committee before a Special Selection Officer was appointed in October, 1919. Originally it was proposed to train disabled men only, but later it was decided to extend the privilege to all returned soldiers who were under 20 years of age at the time of enlistment. Provision was made for accommodating the classes in the Technical School and in workshops and other premises built or rented in various parts of the metropolis.

At present pupils leaving the State Schools at the age of fourteen to take up employment may by attendance at evening classes qualify for free admission to the Technical Schools. Those with leaving certificates from the eighth standard, and others able to devote their full time to study, may obtain day instruction at the Technical Schools in subjects bearing on their intended occupations, or may qualify for a more extended course, including graduation at the University. Returns for the last five years are embodied in the table hereunder :—

TECHNICAL EDUCATION.—WESTERN AUSTRALIA, 1917 TO 1921.

Year.	Number of Classes.	Enrolments.	Individual Students.	Number of Teachers.	Fees Received.
					£
1917	439	5,100	2,767	120	1,083
1918	435	5,853	3,320	127	920
1919	463	5,713	3,337	130	842
1920	455	5,424	3,158	151	976
1921	461	6,773	3,466	145	1,920

7. **Tasmania.**—Provision for technical education dates from the year 1888, but in the report of the Commission appointed in 1916 to inquire into the condition of technical education in Tasmania, allusion was made to the want of co-ordination between existing institutions and the Education Department, and it was recommended that the schools should be taken over by the Government, and a trained technologist appointed as organizing inspector. The inspector was appointed in 1917 and a Technical Education Branch was established in 1918. The scheme of technical education includes provision for courses of training in industrial, commercial, and domestic pursuits. Under the first-mentioned, the scheme provides for junior technical schools, applied science schools, technical trade schools, and art and applied art schools, and it is to this group that the activities of the Department have hitherto been almost exclusively confined. The co-operation of employers and employees has been obtained, and certain of the more advanced courses have been co-ordinated with the courses given at the University. There are Junior Technical Schools for boys at Hobart and Launceston, and for boys and girls at Queens-town and Zeehan. Senior Technical Schools are in operation at Hobart and Launceston, organized into Departments of Engineering and Applied Science, Art, and Trade; and at Queenstown and Zeehan, courses in Metallurgical and Mining Engineering are undertaken. Vocational classes for returned soldiers were established at Hobart and Launceston, and the training scheme was completed at the end of 1921.

TECHNICAL EDUCATION.—TASMANIA, 1917 TO 1921.

Year.	Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
					£
1917	68	829	470	38	871
1918	68	836	472	38	878
1919	107	752	478	56	784
1920	135	1,152	784	63	1,338
1921	167	1,218	860	65	1,286

8. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1917 to 1921 is shown below :—

TECHNICAL EDUCATION.—EXPENDITURE, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
1917 { (a)	90,633	88,058	37,906	20,265	10,872	3,915	251,649
{ (b)	20,163	10,603	4,599	2,637	672	..	38,674
1918 { (a)	99,275	102,287	41,566	24,363	13,444	4,738	285,673
{ (b)	10,651	30,656	9,931	7,706	492	..	59,436
1919 { (a)	115,087	115,383	44,285	26,580	14,047	10,335	325,717
{ (b)	6,302	8,083	10,180	3,586	569	..	28,720
1920 { (a)	211,987	118,168	57,219	34,538	16,326	13,677	451,915
{ (b)	2,668	9,326	22,607	13,080	494	328	48,503
1921 { (a)	210,515	162,596	62,321	40,864	19,212	17,808	513,316
{ (b)	13,972	29,619	4,854	4,172	580	259	53,456

(a) Maintenance. (b) Buildings.

The expenditure on maintenance for technical education in 1921 amounted to 1s. 11d. per head of the population of the Commonwealth, as compared with 25s. 7d. per head expended on maintenance for primary education, and apparently shows that technical education has not attained its proper place in the educational organization of Australia.

§ 7. Business Colleges and Shorthand Schools.

There has been considerable development in recent years both in the number and scope of privately conducted institutions which aim at giving instruction in business methods, shorthand, typewriting, the use of calculating machines, etc. Particulars for all States excepting Queensland are given in the following table :—

BUSINESS COLLEGES, SHORTHAND SCHOOLS, ETC., 1921.

State.	Schools.	Teachers.	Students Enrolled.		Average Attendances.		Fees Received.
			Males.	Females.	Males.	Females.	
							£
New South Wales ..	16	114	3,233	4,102	826	2,006	41,317
Victoria	17	178	3,871	2,512	2,616	1,917	(b)
Queensland(a) ..	..	..	..	..	..	..	..
South Australia ..	6	44	801	1,118	454	588	12,582
Western Australia	13	65	1,093	1,005	(b)	(b)	16,845
Tasmania	3	14	215	257	144	140	3,408

(a) Included in private schools.

(b) Not available.

The figures for New South Wales are exclusive of students instructed at home through the medium of correspondence classes.

In Victoria it is explained that the preponderance of male students is due to the larger enrolment of males in the correspondence classes.

§ 8. Diffusion of Education.

1. General Education.—A rough indication of the state of education of the people is obtained at each Census under the three headings, “read and write,” “read only,” and “cannot read.” The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1871 :—

EDUCATION AT CENSUS PERIODS, 1871 TO 1921.

State or Territory.		1871.	1881.	1891.	1901.	1911.	1921.
N.S.W. (a)	Read & write	296,741	507,067	835,562	1,071,935	1,380,196	1,760,435
	Read only..	56,391	49,372	43,539	29,728	6,557	5,868
	Cannot read	149,866	193,386	244,853	253,183	259,981	334,068
Victoria	Read & write	478,464	653,346	908,490	998,010	1,136,189	1,331,621
	Read only..	70,953	47,950	32,794	21,852	4,741	3,238
	Cannot read	180,781	160,270	198,556	181,208	174,621	196,421
Q'land	Read & write	74,940	136,436	276,381	376,294	508,584	633,338
	Read only..	12,080	13,657	14,618	11,737	3,542	3,108
	Cannot read	33,084	63,432	102,719	110,098	93,687	119,526
S. Aust. (b)	Read & write	117,349	200,057	236,514	290,748	344,398	421,025
	Read only..	21,509	15,267	9,571	8,283	1,812	1,643
	Cannot read	46,768	64,541	74,346	64,126	62,348	72,492
W. Aust.	Read & write	14,166	19,684	34,254	150,099	237,605	283,344
	Read only..	2,717	2,430	2,061	3,107	972	890
	Cannot read	7,902	7,594	13,467	30,918	43,537	48,498
Tasm'nia	Read & write	55,941	74,966	103,138	133,579	155,447	175,435
	Read only..	13,946	9,606	6,287	3,907	925	610
	Cannot read	29,441	31,133	37,242	34,989	34,839	37,735
Northern Ter.(c)	Read & write	..	..	..	..	2,408	2,832
	Read only..	..	..	..	..	36	15
	Cannot read	..	..	..	..	866	1,020
Federal Ter.(d)	Read & write	..	..	..	..	1,424	2,093
	Read only..	..	..	..	..	14	8
	Cannot read	..	..	..	..	276	471
C'wealth	Read & write	1,037,601	1,591,556	2,394,339	3,020,665	3,766,251	4,610,123
	Read only..	177,596	138,282	108,870	78,614	18,599	15,380
	Cannot read	447,842	520,356	671,183	674,522	670,155	810,231

(a) Including Federal Territory prior to 1911.

(b) Including Northern Territory prior to 1911.

(c) Included in South Australia prior to 1911.

(d) Included in New South Wales prior to 1911.

It will of course be understood that the heading “cannot read” includes a large proportion of children under five years of age.

The proportion in Australia of the various classes per 10,000 of the population is shown below for each Census period :—

PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS, 1871 TO 1921.

(AUSTRALIA.)

Division.		1871.	1881.	1891.	1901.	1911.	1921.
Read and write	.. ..	6,239	7,073	7,543	8,004	8,454	8,481
Read only	.. ..	1,068	615	343	208	42	28
Cannot read	.. ..	2,693	2,312	2,114	1,788	1,504	1,491

As pointed out previously, the “cannot read” group includes a large proportion of children under five years of age.

2. **Education of Children.**—The figures in the preceding tables refer to the entire population of Australia, and as the age constitution of those dwelling in the various portions thereof underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census from 1861 to 1911 will be found below. Similar particulars for the Census of 1921 are not yet available.

**EDUCATION OF CHILDREN OF SCHOOL AGE AT CENSUS PERIODS, 1861
TO 1911.**

State or Territory.		1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. ^a	Read & write	34,040	68,776	121,735	196,240	251,187	291,450
	Read only..	20,345	26,886	25,100	21,375	15,934	993
	Cannot read	25,472	32,924	41,663	48,580	60,734	34,793
Victoria	Read & write	42,268	122,739	170,713	201,199	236,515	237,028
	Read only..	25,518	39,636	25,249	15,656	13,128	410
	Cannot read	19,341	29,490	21,421	27,441	27,765	19,621
Q'land	Read & write	2,156	12,698	33,317	62,402	95,635	117,347
	Read only..	1,534	6,104	7,019	7,580	5,955	616
	Cannot read	1,629	6,015	9,615	16,257	18,827	8,633
S. Aust. ^b	Read & write	15,485	30,608	46,630	58,291	69,451	69,878
	Read only..	8,748	12,432	7,926	4,618	4,229	248
	Cannot read	6,907	10,074	12,483	17,988	15,480	9,638
W. Aust.	Read & write	1,333	3,218	4,418	6,910	25,326	47,568
	Read only..	226	617	1,260	933	1,815	159
	Cannot read	1,015	1,795	1,593	2,348	5,431	5,234
Tasm'nia	Read & write	11,919	17,335	17,188	24,007	32,890	36,351
	Read only..	2,848	4,143	4,108	2,974	1,795	186
	Cannot read	4,581	6,663	6,606	8,829	8,475	5,575
Northern Ter. ^c	Read & write	..	..	..	..	..	195
	Read only..	..	..	..	..	..	..
	Cannot read	..	..	..	..	..	118
Federal Ter. ^d	Read & write	..	..	..	..	..	322
	Read only..	..	..	..	..	..	2
	Cannot read	..	..	..	..	..	47
C'wealth	Read & write	107,201	255,374	394,001	549,049	711,004	800,139
	Read only..	59,219	89,818	70,662	53,136	42,856	2,614
	Cannot read	58,945	86,961	93,381	121,443	136,712	83,659

(a) Including Federal Territory prior to 1911.

(c) Included in South Australia prior to 1911.

(b) Including Northern Territory prior to 1911.

(d) Included in New South Wales prior to 1911.

In the case of Tasmania full details for the years 1861 and 1871 are not available and the figures for those years are approximate. The variation in degree of education may be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school age could read and write, while 26 per cent. were illiterate. The returns for 1911 show that the proportion of those who could read and write had increased to over 90 per cent., while the totally illiterate had declined by nearly two-thirds.

**EDUCATION OF CHILDREN (AGES 5 TO 14) PER 10,000 AT CENSUS PERIODS,
1861 TO 1911.**

State or Territory.		1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. ^a	Read & write	4,263	5,349	6,458	7,372	7,662	8,907
	Read only..	2,547	2,091	1,332	803	486	30
	Cannot read	3,190	2,560	2,210	1,825	1,852	1,063
Victoria	Read & write	4,851	6,397	7,853	8,236	8,526	9,221
	Read only..	2,929	2,066	1,162	641	473	16
	Cannot read	2,220	1,537	985	1,123	1,001	763
Q'land	Read & write	4,053	5,116	6,670	7,236	7,942	9,269
	Read only..	2,884	2,460	1,405	879	495	49
	Cannot read	3,063	2,424	1,925	1,885	1,563	682
S. Aust. ^b	Read & write	4,973	5,763	6,956	7,206	7,790	8,761
	Read only..	2,809	2,341	1,182	571	474	31
	Cannot read	2,218	1,896	1,862	2,223	1,736	1,208
W. Aust.	Read & write	5,179	5,716	6,076	6,780	7,775	8,982
	Read only..	878	1,096	1,733	916	557	30
	Cannot read	3,943	3,188	2,191	2,304	1,668	988
Tasm'nia	Read & write	6,160	6,160	6,160	6,704	7,620	8,632
	Read only..	1,472	1,472	1,472	830	416	44
	Cannot read	2,368	2,368	2,368	2,466	1,964	1,324
Northern Ter. ^c	Read & write	..	..	..	..	..	6,230
	Read only..	..	..	..	..	..	..
	Cannot read	..	..	..	..	..	3,770
Federal Ter. ^d	Read & write	..	..	..	..	..	9,868
	Read only..	..	..	..	..	..	5
	Cannot read	..	..	..	..	..	127
C'wealth							
	Read & write	4,757	5,910	7,061	7,588	7,984	9,027
	Read only..	2,628	2,078	1,266	734	481	29
	Cannot read	2,615	2,012	1,673	1,678	1,535	944

(a) Including Federal Territory prior to 1911.

(c) Including Northern Territory prior to 1911.

(b) Included in South Australia prior to 1911.

(d) Included in New South Wales prior to 1911.

3. Education as shown by Marriage Registers.—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1921 was as follows :—

EDUCATION.—MARRIAGE SIGNATURES, AUSTRALIA, 1861 TO 1921.

Proportion Signing with Marks of Total Persons Married.				Proportion Signing with Marks of Total Persons Married.			
Year.		Males.		Females.		Total.	
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1861	..	18.50	30.69	24.60	1901	..	1.35
1871	..	10.58	16.40	13.49	1911	..	0.56
1881	..	4.34	6.78	5.56	1921	..	0.16
1891	..	2.27	2.40	2.34			

The table shows that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but during the later years the rates have been very even.

§ 9. Miscellaneous.

1. **Scientific Societies.**—(i) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus the origin of the Royal Society dates as far back as 1821, when it was founded under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of a Society whose name varied as the years rolled on. It was called the Australian Philosophic Society in 1850. In 1856 the old Australian Society merged into a resuscitated Philosophical Society of New South Wales, and its papers were published up to 1859 in the Sydney Magazine of Science and Art (2 vols., 1858–9). Its present title dates from 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of “Geographical Memoirs of New South Wales” (Barron Field), and contain much that is interesting in regard to the early history of Australia. One volume containing the Transactions of the Philosophical Society of New South Wales (1862–65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. “Transactions of the Royal Society of New South Wales” were issued in 1867, the title of the series being altered to “Journal” in 1878. Up to the end of 1922, 56 volumes had been published. The exchange list comprises the names of 332 kindred societies. At the present time the library contains over 30,000 volumes and pamphlets, valued at about £8,600. Income and expenditure for the year ended 31st March, 1923, were £1,701 and £1,852 respectively, and the Society had on the same date 372 members.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, whilst the Society received its present title in 1860. The first volume of its publications dates from 1855. Up to 1922, 67 volumes of proceedings had been issued. The Society exchanges with 235 kindred bodies. The constitution of the Society states that it was founded “for the promotion of art, literature, and science,” but for many years past science has monopolized its energies. The library contains over 14,500 volumes, valued approximately at £3,800. Income for the year 1922 amounted to £503, and expenditure to £510. There are 190 members on the roll.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The Society was formed “for the furtherance of the natural and applied sciences, especially by means of original research.” Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At the end of 1922 the members numbered 105; publications issued, 34 volumes; library, 7,000 volumes; societies on exchange list, 200. Income and expenditure in 1922 amounted to £270 and £250 respectively.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the Society became purely scientific. Permission to assume the title of “Royal” was obtained in 1879, the Society thenceforward being known as “The Royal Society of South Australia.” In 1903 the society was incorporated. In 1922 the number of members was 101. The income for the year 1922 was £621, and expenditure £378. Up to 1922 the Society had issued 46 volumes of proceedings and 8 parts

of memoirs, exclusive of several individual papers published in earlier years. The exchange list numbers about 230, while the library contains 4,000 volumes and over 1,850 pamphlets.

Permission to assume the title of Royal Society was granted to the Natural History and Science Society of Western Australia in March, 1914. This Society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the Society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and issue of reports of proceedings. It numbers at present 153 members, whose subscriptions form its main source of revenue, the income and expenditure in 1921-22 being each £112. Five volumes of proceedings were issued as *Journal of the Natural History and Science Society of Western Australia*, and nine as of the Royal Society. Its publications are exchanged with 75 institutions at home and abroad. The library contains 200 volumes, besides 650 unbound journals, pamphlets, etc.

The Royal Society of Tasmania (the first Royal Society outside the United Kingdom) was inaugurated by Sir Eardley Wilmot, Lieutenant-Governor of Van Diemen's Land, on the 14th October, 1843. It may be mentioned, however, that a scientific society had been formed as far back as 1838 under the presidency of Sir John Franklin, then Governor of the colony, and in 1841 the number of resident members was 31, and corresponding members, 38. The meetings of this parent society were held at Government House, and three volumes of proceedings were issued. A large portion of the Colonial Gardens, together with a grant of £400, was given to the Society. A library and museum were established in 1848. In 1885 the museum and gardens were given back to the State, the Society being granted room in the museum for its library and meetings. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The Society, which, since 1844, has published 62 annual volumes of proceedings, possesses 243 members, 12 corresponding members, 9 life members, exchanges with 225 kindred bodies, and has a library containing 13,000 volumes, in addition to manuscripts, etc., valued at over £10,000. Income for the year 1922 was £367, and expenditure £365.

(ii) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its head-quarters in Sydney. It meets usually in each State biennially in turn. Its receipts at latest available date were about £14,000, including Government aid to the amount of £4,000. The library contains 4,000 volumes and parts valued at £400. Up to 1921, 14 volumes of proceedings have been issued. The exchange list numbers about 140.

The Linnean Society of New South Wales, with head-quarters in Sydney, was founded in 1875. The soundness of its present position is due to the benefactions of Sir William Macleay, who during his lifetime and by his will endowed the Society to the amount of £67,000, which has been increased by judicious investment to nearly £80,000. Income for the year 1922 amounted to £4,721 and expenses to £4,412, including £2,314 for research purposes. The Society maintains a research bacteriologist, and offers annually 4 research fellowships in various branches of natural history. The library comprises some 12,000 volumes, valued at about £6,000. Forty-seven volumes of proceedings have been issued, and the Society exchanges with some 175 kindred institutions. The ordinary membership at the end of 1922 was 158.

The British Astronomical Society has a branch in Sydney, and in some of the States the British Medical Association has branches.

The Chemical Society of Western Australia was founded in 1915, for the promotion of the study of Chemistry and the furtherance of the interests of professional chemists. Meetings are held monthly. There is a council consisting of seven members.

In addition to the societies enumerated above—there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. Public Libraries.—In each of the capital cities there is a well-equipped Public Library, the institutions in Melbourne and Sydney especially comparing very favourably

with similar institutions elsewhere. The following statement gives the number of volumes in the Public Library of each capital city :—

METROPOLITAN PUBLIC LIBRARIES, 1921.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney	(a)314,425	(b)	41,579	356,004
Melbourne	282,103	39,017	..	321,120
Brisbane	43,265	..	..	43,265
Adelaide	114,753	38,889	..	153,642
Perth	114,269	..	15,271	129,540
Hobart	22,702	..	..	22,702

(a) Including 107,021 volumes in the Mitchell Library.

(b) The maintenance and control of the ordinary lending branch of the Public Library at Sydney were transferred in 1908 to the Municipal Council. At the end of December, 1921, the books numbered 37,964.

Amongst other important libraries in New South Wales may be mentioned the "Fisher" Library at Sydney University with 131,500 volumes; the library at the Australian Museum, 23,198; the Teachers' College library, 19,330; Sydney Technical College library, 11,500; and the library at the Botanic Gardens, 7,900. Libraries attached to the various State Schools possessed nearly 357,000 volumes in 1921. During this year the Public Library authorities inaugurated the system of lending boxes of children's books to country schools, and 120 of these children's travelling libraries are now in circulation. Boxes are forwarded to out-back schools distant from towns. Each box contains about 40 books, and is lent for a period of four months, and then exchanged for another collection, the Library Trustees defraying the cost of carriage both ways.

A special research staff attached to the Public Library gives valuable assistance in making readily available to inquirers the store of information contained in books, etc., which, owing to limitations of space, are not in open access.

The Mitchell Library in Sydney consisted of over 60,000 volumes and pamphlets, and 300 paintings, principally relating to Australasia, valued at £100,000, and bequeathed in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists. There are now about 107,000 volumes in the library. During 1917 the Mitchell Library was further enriched by a donation of 3,676 printed volumes, 117 volumes of manuscript, and 235 pamphlets from the working library of the late John Tebbutt, of Windsor, the well-known astronomer. A very fine collection of New South Wales postage and fiscal stamps, estimated by philatelists to be worth at least £20,000, was presented to the trustees by Mr. H. L. White, of Belltrees, near Scone, in June of the same year. In 1921 this gift was supplemented by the presentation of a very fine collection of Queensland and Western Australian stamps, also valued by experts at about £20,000.

The reading room at the Melbourne Public Library ranks among the finest in the world. It was opened in 1913, and has a diameter of 114 feet, with a similar height, and is capable of seating 320 readers at a time, all of whom are under efficient supervision from the centre of the room.

The library at Brisbane (South) contained over 13,000 volumes at the end of 1921.

For some years past efforts have been made in South Australia to collect original documents likely to be of service in compiling a history of the State. So far back as 1914 Professor Henderson, of Adelaide University, under commission from the South Australian Government, visited and reported on the system of keeping archives in England, France, Belgium, Holland, and Ceylon, and obtained valuable information also from the United States and Canada. A department of historical documents has been created under the care of an archivist, and valuable preliminary work done in

connexion with examination, classification, and permanent preservation of the available papers. A suitable building for housing the documents and the staff was provided in 1921. The archives contain 159,573 documents, 3,775 photographs, and 110 maps.

The cost of construction of the Public Library building in Western Australia to the 30th June, 1922, was about £27,000.

The library at Launceston, in Tasmania, contains 30,000 volumes.

Mention may be made here of the free library attached to the Commonwealth Patents Office, which contains over 10,000 volumes, including literature dealing with patents in the principal countries of the world.

Statistics in regard to libraries generally are not available for all States, while the information supplied is not in all cases complete. Returns for Victoria in 1921 showed a total of 460 libraries in receipt of State or municipal aid, containing 1,203,500 books; Queensland returned 206 libraries with 398,000 books; South Australia, 225 libraries and 750,000 books; Western Australia, 263 libraries and 278,000 books; Tasmania, 22 libraries and 107,000 books.

3. Public Museums.—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £79,000. The number of visitors to the institution in 1921 was 225,000, and the average attendance on week-days 598, and on Sundays 1,271. The expenditure for 1921 amounted to £13,976. A valuable library containing about 23,000 volumes is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are all accessible to the public. There is a fine Technological Museum in Sydney, with branches in five country centres. Valuable research work has been performed by the scientific staff in connexion with oil and other products of the eucalyptus and essential oils of other native vegetation. The number of visitors to the Technological Museums during 1921 was about 175,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library Building. The National Art Gallery is situated in the same building. The Industrial and Technological Museum, also housed under the same roof, contains over 9,000 exhibits. Cost of construction for the combined institutions is set down at £327,000. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. In addition to the large collection in the geological museum attached to the Mines Department in Melbourne, well-equipped museums of mining and geological specimens are established in connexion with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £103,301, of which buildings absorbed £20,538, purchases £29,714, and salaries £53,049. The number of visitors during the year was 92,825, of whom 37,000 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and in Brisbane, opened in 1892.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist and the books contained therein were divided amongst the Museum, Public Library, and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 86,000 visitors in 1921. Cost of construction of the Museum building was returned as £65,000.

The latest available returns show that the Western Australian Museum contains altogether 94,000 specimens, of an estimated value of £80,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions

during the year reached 77,000. Cost of construction of the building amounted to £45,800. The expenditure for the year 1921–22 was £6,178, and the Government grants for the year amounted to £6,000, the figures in each case including returns for the Public Library.

There are two museums in Tasmania—the Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston—both of which contain valuable collections of botanical, mineral, and miscellaneous products. The Tasmanian Museum received aid from the Government during 1921 to the extent of £1,250. The Hobart institution cost £9,500 to construct, and that at Launceston £6,000.

4. Public Art Galleries.—The National Art Gallery of New South Wales originated in the Academy of Art founded in 1871. Cost of construction of the present building amounted to about £94,000. At the end of 1921 its contents, which are valued at £162,000, comprised 497 oil paintings, 461 water colours, 747 black and white, 177 statuary and bronzes, and 475 ceramics, works in metal and miscellaneous. During 1921 the average attendance on week days was 480, and on Sundays 1,418.

The National Gallery at Melbourne at the end of 1921 contained 634 oil paintings, 5,015 objects of statuary, bronzes and ceramics, and 14,448 water colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £327,000. Several munificent bequests have been made to the institution. That of Mr. Alfred Felton, given in 1904, amounts to about £8,000 per annum. In 1913, Mr. John Connell presented his collection of art furniture, silver, pictures, etc., the whole being valued at £10,000. The Art Gallery at Ballarat contains 227 oil paintings, 174 water colours, and 48 statuary bronzes, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Castlemaine, Geelong, and Warrnambool.

The Queensland National Art Gallery, situated in the Executive Buildings, Brisbane, was founded in 1895, and contains a small, but well chosen collection of pictures. At the end of 1921 there were on view 102 oil paintings, 26 water colours, 135 black and white, and 31 pieces of statuary, together with various prints, mosaics, and miniatures. Exclusive of exhibits on loan, the contents are valued at about £11,000. Visitors during the year averaged 148 on Sundays and 114 on week days.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2,000 in the purchase of pictures, which were exhibited in the Public Library Building in 1882. The liberality of private citizens caused the gallery to rapidly outgrow the accommodation provided for it in 1889 at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received bequests of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3,000 in 1907 from Mr. David Murray. At the 30th June, 1921, there were in the Gallery 243 oil paintings, 79 water colours, and 24 statuary. Building and site are valued at upwards of £31,000. Visitors during the year 1921 numbered 87,000. The cost of construction of the Art Gallery amounted to £22,000.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, and, as is the case in Melbourne, the Public Library, Museum, and Art Gallery are all situated in the one structure. The collection comprises 107 oil paintings, 53 water colours, 256 black and white, 275 statuary, and various ceramic and other art objects. It is estimated that the collections in the Gallery possess a value of about £14,000.

In Tasmania, the Art Gallery at Hobart was opened in 1887. Its present contents consist of 70 oil paintings, 93 water colours, 11 black and white, and 175 etchings, engravings, etc., the value of the contents being estimated at £6,500.

The Art Gallery at Launceston was erected in 1888 at a cost of £6,000, and opened on the 2nd April, 1981. Only a small proportion of the contents belong to the gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 95 oil paintings, 20 water colours, and miscellaneous exhibits, the whole being valued at £10,000.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the Consolidated Revenue in each State and Territory on all forms of educational and scientific activity during each of the last five financial years was as follows :—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1917-18 TO 1921-22.

State or Territory.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
New South Wales ..	Total £	1,968,366	2,139,541	2,359,900	3,737,960	3,736,294
	Per head	20/6	21/9	23/1	35/8	35/1
Victoria ..	Total £	1,227,629	1,248,994	1,474,877	1,847,184	1,955,036
	Per head	17/4	17/5	19/7	24/2	25/2
Queensland ..	Total £	827,332	892,992	1,103,334	1,350,399	1,362,197
	Per head	24/1	25/4	29/11	35/11	35/5
South Australia ..	Total £	397,210	428,519	487,609	607,160	627,075
	Per head	17/9	18/9	20/3	24/9	25/0
Western Australia..	Total £	397,661	407,822	460,384	543,356	596,518
	Per head	25/11	26/4	28/1	32/10	35/7
Tasmania ..	Total £	140,766	158,501	179,871	263,524	281,677
	Per head	14/3	15/7	17/1	24/9	25/10
Northern Territory	Total £	2,479	2,676	2,467	4,291	4,860
	Per head	10/3	11/6	10/10	21/6	26/0
Commonwealth						
	Total £	4,961,443	5 279,045	6,068,442	8,353,874	8,563,657
	Per head	19/11	20/9	22/11	30/10	31/1

The comparatively heavy increases during the last five years are partly due to the expanding provision for State-aided education, to greater cost of building, equipment, and maintenance, and, in the later years, to increases in teachers' salaries and allowances.

CHAPTER X.
PUBLIC JUSTICE.

§ 1. Police.

1. **General.**—In previous issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

2. **Strength of Police Force.**—(i) *General.* The strength of the police force in each State during the five years ended 1921 is given in the table hereunder. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilizes their services in various directions, such as the collection of particulars for Commonwealth electoral rolls, etc.

POLICE FORCES.—STRENGTH, 1917 TO 1921.

State.	Area of State in Sq. Miles.	1917.	1918.	1919.	1920.	1921.
New South Wales ..	310,372	2,557	2,481	2,569	2,630.	2,738
Victoria	87,884	1,650	1,558	1,719	1,733	1,736
Queensland ..	670,500	1,152	1,141	1,119	1,126	1,105
South Australia ..	380,070	540	521	541	566	593
Western Australia	975,920	472	465	466	473	493
Tasmania ..	26,215	235	235	243	240	240
Northern Territory	523,620	27	28	32	32	30
Total ..	2,974,581	6,633	6,429	6,689	6,800	6,935

The figures for New South Wales for 1921 are exclusive of 34 “black trackers,” i.e., natives employed in detection of offenders chiefly in outlying districts, and four female searchers. For Queensland the figures exclude 65 native trackers; for South Australia 10 “black trackers” and 1 female searcher, and for the Northern Territory 28 “black trackers.” There are also 44 “black trackers” and 5 female searchers in Western Australia, not included in the table. According to the returns, women police are employed in all the States except Queensland, the respective numbers being—New South Wales, 4, Victoria 3, South Australia 10, Western Australia 6, and Tasmania 2. Their work is mainly preventive, and the importance and usefulness of their duties have been referred to in very high terms, especially by the Commissioner of Police in South Australia.

(ii) *Proportion to Population.* The average number of inhabitants to each officer in each State during the same period is as follows. In considering these figures, allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

POLICE FORCES.—COMPARISON WITH POPULATION, 1917 TO 1921.

State.	Number of Persons per Sq. Mile, 1921 Census.	Inhabitants to each Police Officer.				
		1917.	1918.	1919.	1920.	1921.
New South Wales	6.76	475	784	779	786	770
Victoria	17.43	855	914	857	872	885
Queensland	1.13	593	613	648	664	692
South Australia	1.30	819	867	866	860	839
Western Australia	0.34	648	662	686	697	676
Tasmania	8.16	827	844	844	877	889
Northern Territory .. ..	..	180	174	145	132	130
Total	1.83	746	782	777	788	787

3. **Duties of the Police.**—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. Thus, in New South Wales, according to the Report of the Inspector-General, the time of one-fifth of the force was taken up during 1921 in extraneous duties unconnected with the protection of life and property, while the cash value of the services rendered to other Government departments was stated as over £200,000 per annum. The Queensland Commissioner refers to the circumstance that in 1921 no less than 66 subsidiary offices were held by the police. In South Australia, the Commissioner alludes to the large number of subsidiary duties performed by police officers, and mentions that in 1921 over 80,000 inquiries were made on behalf of other departments.

While these special tasks doubtless involve some degree of sacrifice of ordinary routine duties, the fact that the general intelligence of the police is adequate for their performance, besides being most creditable, results in a large saving of the public money.

4. **Cost of Police Forces.**—The expenditure from Consolidated Revenue on the police forces, and the cost per head of population in each State during the five years 1917 to 1921 are given in the following table:—

POLICE FORCES.—COST, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
TOTAL.					
	£	£	£	£	£
New South Wales ..	709,649	722,754	977,506	1,101,767	1,150,323
Victoria ..	371,413	397,025	490,016	577,407	579,351
Queensland ..	337,259	346,802	407,480	476,153	458,955
South Australia ..	136,158	151,090	159,258	197,157	211,428
Western Australia ..	136,752	136,295	171,832	186,717	184,245
Tasmania ..	49,448	54,960	66,940	79,372	79,105
Northern Territory ..	10,210	10,200	11,435	12,970	15,520
Total ..	1,750,889	1,819,126	2,284,467	2,631,543	2,678,927

PER HEAD OF POPULATION.

	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ..	7 5	7 5	9 9	10 8	10 11
Victoria ..	5 3	5 7	6 8	7 8	7 6
Queensland ..	9 10	9 11	11 1	12 9	12 0
South Australia ..	6 2	6 8	6 10	8 1	8 6
Western Australia ..	8 11	8 10	10 9	11 4	11 0
Tasmania ..	5 1	5 7	6 6	7 7	7 5
Northern Territory ..	42 1	41 11	49 2	61 7	79 5
Total ..	7 1	7 3	8 9	9 10	9 10

The total for New South Wales in 1921 includes £91,000 payment to the Police Superannuation Fund. Similar payments in Victoria and Queensland amount to £41,800 and £39,000 respectively, while smaller sums are included in the returns for other States.

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained. In view of the small number of its white population and the vast extent of country to be patrolled, the figures for the Northern Territory necessarily show a very high average. The duties of the police, moreover, chiefly pertain to matters connected with the control of aborigines.

The general advance in cost during the period under review is due to increases in salaries and rise in prices of supplies and equipment.

5. Interstate Police Conferences.—In February, 1921, a Conference of the chief officers of the police forces of the various States was held in Melbourne. In addition to the discussion of matters of common interest, arrangements were made for the interchange of detectives. The results have been satisfactory, and it is proposed to extend the system.

§ 2. Lower (Magistrates') Courts.

1. General.—In considering the criminal returns of the various States, due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State the breach of which renders a person liable to fine or imprisonment must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age-constitution and distribution of the State's population, also influence the results. Due weight should also be given to the prevalence of undetected crime, but information on this point can be obtained only for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Arbitration and Conciliation. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution, which is quoted in full in Chapter I. of this work.

2. Powers of the Magistrates.—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in each case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorized places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria, the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the Criminal Code (betting-houses and illegally using animals) sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1916 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues; while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Offences Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence, in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. **Persons Charged at Magistrates' Courts.**—The total number of persons who were charged before magistrates in each State is given below for the five years 1917 to 1921 :—

MAGISTRATES' COURTS.—PERSONS CHARGED, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
New South Wales	71,666	76,870	78,103	89,572	94,685
Victoria	52,175	58,965	58,470	56,698	62,402
Queensland	24,243	25,006	21,926	24,180	24,479
South Australia	8,627	9,161	8,804	10,143	10,622
Western Australia	11,885	11,599	9,769	10,430	10,775
Tasmania	5,278	6,583	6,362	6,629	7,185
Northern Territory	239	301	221	221 ^a	115
Total	174,113	188,485	183,655	197,873	210,263

(a) Year 1919. Returns for 1920 not available.

Investigation of the returns shows that considerable variations in the total for single States are occasioned by breaches of new Acts, or the more stringent enforcement of the provisions of existing Acts. Any deductions drawn from the total returns as to the increase or otherwise of criminality must, therefore, be largely influenced by a careful analysis of the detailed list of offences.

4. **Convictions and Committals.**—The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of general importance. The actual number of convictions in connexion with the persons who appeared before the lower courts in each year of the period 1917 to 1921 is, therefore given hereunder. A separate line is added showing the committals to higher courts.

MAGISTRATES' COURTS.—CONVICTIONS AND COMMITTALS, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
New South Wales .. { Convictions	59,999	63,811	64,518	74,667	80,214
.. { Committals	1,383	1,308	1,680	2,239	2,594
Victoria { Convictions	38,757	44,900	44,623	43,088	46,924
.. { Committals	495	406	575	795	776
Queensland { Convictions	21,985	22,818	19,773	21,922	22,479
.. { Committals	312	207	255	309	328
South Australia .. { Convictions	7,417	7,898	7,527	8,628	8,968
.. { Committals	82	79	74	123	121
Western Australia .. { Convictions	10,535	10,162	8,702	9,198	9,605
.. { Committals	126	96	127	112	120
Tasmania { Convictions	4,722	5,854	5,807	6,033	6,474
.. { Committals	40	37	55	72	88
Northern Territory { Convictions	230	255	187	187 ^a	100
.. { Committals	3	6	3	3 ^a	8
Total { Convictions	143,645	155,698	151,137	163,723	174,764
.. { Committals	2,441	2,139	2,769	3,653	4,035

(a) Year 1919. Returns for 1920 not available.

5. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be overlooked that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliament. Cases of drunkenness and minor breaches of good order, which, if they can be said to come within the category of crime at all, at least do

so in a very different sense to some other offences, also help to swell the list. The following table, has therefore, been prepared for the purpose of showing the convictions at magistrates' courts for what may be regarded as the more serious offences, *i.e.*, against the person and property, either separately or conjointly, and forgery and offences against the currency :—

MAGISTRATES' COURTS.—CONVICTIONS FOR SERIOUS CRIME, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
TOTAL.					
New South Wales ..	5,499	6,355	7,232	7,704	8,057
Victoria	2,830	3,162	2,976	4,294	3,719
Queensland	1,403	1,427	1,526	1,357	1,747
South Australia ..	490	534	629	772	855
Western Australia ..	845	884	995	993	976
Tasmania	390	479	594	548	550
Northern Territory ..	50	18	11	11 ^a	42
Total	11,507	12,859	13,963	15,679	15,946

(a) Year 1919. Returns for 1920 not available.

PER 10,000 OF THE POPULATION.

New South Wales ..	28.9	32.7	36.1	37.2	38.2
Victoria	20.0	22.2	20.2	28.4	34.2
Queensland	20.5	20.4	21.1	18.1	22.8
South Australia ..	11.1	11.8	13.4	15.9	17.2
Western Australia ..	27.6	28.7	31.1	30.1	29.3
Tasmania	20.1	24.2	29.0	26.0	25.8
Northern Territory ..	103.1	37.0	23.6	23.6	107.4
Total	23.3	25.6	26.9	29.3	29.2

6. Decrease in Serious Crime, 1881 to 1921.—(i) *Rate of Convictions.* The figures quoted in the preceding table show that while during the last five years the rate of serious crime has increased somewhat, if the comparison be carried back to 1881 the position is seen to be more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, 1917, and 1921. Only the more serious offences particularized in the preceding sub-section have been taken into consideration.

MAGISTRATES' COURTS.—SERIOUS CRIME.—RATE OF CONVICTIONS, 1881 TO 1921.

Year.	Convictions per 10,000 Persons.
1881	69.3
1891	44.8
1901	29.1
1917	23.3
1921	29.2

The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as petty larcenies, etc., in which the same offender appears before the court many times in the course of a year.

(ii) *Causes of Decrease.* The statistics given above show that there has been a considerable decrease in crime throughout Australia during the period dealt with. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connexion, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues. In regard to the deterrent effect of punishment, it may be said that in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., it appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent sub-section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organizations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc. Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. In his report for the year 1910 the Inspector-General of Police in New South Wales states that "criminals have a wholesome dread of the finger-print system, and I have not the slightest doubt that it is one of the principal causes of the diminution of serious crimes." Part of the improvement may no doubt be referred also to the general amelioration in social conditions that has taken place during the last fifty years.

7. Drunkenness.—(i) *Cases and Convictions.* The number of cases of drunkenness and the convictions recorded in connexion therewith during the period 1917 to 1921 will be found in the following table:—

DRUNKENNESS.—CASES AND CONVICTIONS, 1917 TO 1921.

State.	1917.		1918.		1919.		1920.		1921.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales ..	21,063	20,902	20,651	20,511	19,834	19,546	26,080	25,843	29,047	28,702
Victoria ..	7,575	4,101	5,987	3,049	6,237	3,000	7,154	3,834	7,621	4,334
Queensland ..	13,562	13,065	12,302	11,518	12,178	11,403	12,017	11,712	12,166	11,744
South Australia ..	3,097	3,072	3,308	3,298	3,197	3,171	3,463	3,448	3,465	3,443
Western Australia ..	4,623	4,598	4,058	4,020	3,612	3,595	4,222	4,185	4,135	4,103
Tasmania ..	415	407	433	426	485	474	536	530	539	531
Northern Territory	210	207	81	81	109	109	(a)109	(a)109	51	51
Total ..	50,545	46,352	46,820	42,903	45,652	41,298	53,581	49,661	57,024	52,908

(a) For 1919. Returns for 1920 not available.

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

(ii) *Convictions per 10,000 of Population.* The convictions for drunkenness per 10,000 of the population during each of the years from 1917 to 1921 are given hereunder :—

DRUNKENNESS.—CONVICTIONS PER 10,000 INHABITANTS, 1917 TO 1921.

State.				1917.	1918.	1919.	1920.	1921.
New South Wales	..	..	..	109.7	105.5	97.7	124.9	136.1
Victoria	..	..	..	29.1	21.4	20.4	25.4	28.2
Queensland	..	..	..	191.2	164.8	157.4	156.7	154.0
South Australia	..	..	..	69.5	73.0	67.7	70.1	69.2
Western Australia	..	..	..	150.3	130.6	112.5	127.0	123.1
Tasmania	..	..	..	21.0	21.5	23.1	25.2	24.9
Northern Territory	..	..	..	426.6	166.3	234.2	234.2	130.5
Total	..	..	..	93.7	85.3	79.5	92.6	96.9

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age and sex constitution of the people, for example, is by no means identical in each State, Western Australia having by far the largest proportion of adult males. Owing to the smallness of the population the figures for the Northern Territory are, of course, abnormal. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence. Due account also must be taken of the recent legislation dealing with the limitation of hours during which liquor may be sold in hotels.

(iii) *Consumption of Intoxicants.* It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habits of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shows the consumption of spirits, wine, and beer per head of the population in Australia during each year of the quinquennium 1918–22 :—

INTOXICANTS, CONSUMPTION.—AUSTRALIA, 1918 to 1922.

Year.				Consumption per Head of Population.		
				Spirits.	Wine.	Beer.
				Imp. Galls.	Imp. Galls.	Imp. Galls.
1917–8	..	..	..	0.50	0.50	11.92
1918–9	..	..	..	0.39	0.50	12.50
1919–20	..	..	..	0.45	0.50	13.39
1920–21	..	..	..	0.36	0.50	12.20
1921–22	..	..	..	0.36	0.50	11.49

(iv) *Treatment of Drunkenness.* (a) *General.* Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, certainly lowers his self-respect, and doubtless tends to swell the ranks of criminals. Examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their

criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. The Comptroller-General of Prisons in Queensland stated in his Report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

(b) *Remedial.* Legislation has been passed in each State, providing for the commitment of inebriates to special Government institutions. The laws in the various States are as follows:—New South Wales, Inebriates Act 1912; Victoria, Inebriates Act 1915; Queensland, Inebriate Institutions Act 1896; South Australia, Inebriates Acts 1908, 1913, and 1920; Western Australia, Inebriates Acts 1912 and 1919; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. In most cases the institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless, the results of remedial measures have been encouraging.

8. **First Offenders.**—In all the States and in New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows:—New South Wales, 1894; Victoria, 1890, 1908, and 1915 (Crimes Act, sec. 340); Queensland, 1887; South Australia, 1887 and 1913; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognizances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

9. **Children's Courts.**—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, Tasmania, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these Courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court.

10. **Committals to Superior Courts.**—(i) *General.* In a previous sub-section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connexion allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1917 to 1921, with the rate of such committals per 10,000 of the population.

COMMITTALS TO SUPERIOR COURTS, 1917 TO 1921.

State.			1917.	1918.	1919.	1920.	1921.
New South Wales	..	{ No.	1,383	1,308	1,680	2,239	2,594
		{ Rate	7.3	6.7	8.4	10.8	12.3
Victoria..	..	{ No.	495	406	575	795	776
		{ Rate	3.5	2.9	3.9	5.3	5.0
Queensland	..	{ No.	312	207	255	309	328
		{ Rate	4.6	3.0	3.5	4.1	4.3
South Australia ..	..	{ No.	82	79	74	123	121
		{ Rate	1.9	1.7	1.6	2.5	2.4
Western Australia	..	{ No.	126	96	127	112	120
		{ Rate	4.1	3.1	4.0	3.4	3.6
Tasmania ..	..	{ No.	40	37	55	72	88
		{ Rate	2.1	1.9	2.7	3.4	4.1
Northern Territory	..	{ No.	3	6	3	3	8
		{ Rate	6.2	12.3	6.4	7.1	20.5
Total ..	..	{ No.	2,441	2,139	2,769	3,653	4,035
		{ Rate	4.9	4.3	5.3	6.8	7.4

(ii) *Decrease in Rate since 1861.* The above figures show that the rate of committals for serious crime has increased by 50 per cent. during the last five years, but if the comparison be carried further back, it will be found that, as compared with the earlier years, there has been a considerable improvement. This will be evident from an examination of the following figures, which show the rate of committals per 10,000 persons in Australia at various periods since 1861 :—

RATE OF COMMITTALS, AUSTRALIA, 1861 TO 1921.

Year	..	..	..	..	1861.	1871.	1881.	1891.	1901.	1911.	1921.
Committals per 10,000 inhabitants	..	22	14	12	11	8	6	7			

The decline in proportion to population since 1861 has therefore been about 68 per cent.

§ 3. Superior Courts.

1. *Convictions at Superior Courts.*—The number of convictions at superior courts, with the rate per 10,000 of the population are given below for each of the years 1917 to 1921 :—

SUPERIOR COURTS.—CONVICTIONS, 1917 TO 1921.

State.			1917.	1918.	1919.	1920.	1921.
New South Wales	..	{ No.	661	622	762	1,027	1,111
		{ Rate	3.5	3.2	3.8	5.0	5.3
Victoria..	..	{ No.	303	245	347	461	520
		{ Rate	2.2	1.7	2.4	3.0	3.4
Queensland	..	{ No.	226	193	254	302	338
		{ Rate	3.3	2.8	3.5	4.0	4.4
South Australia	..	{ No.	59	46	47	83	97
		{ Rate	1.3	1.0	1.0	1.7	1.9
Western Australia	..	{ No.	55	55	63	69	70
		{ Rate	1.8	1.8	2.0	2.1	2.1
Tasmania	..	{ No.	28	18	39	51	57
		{ Rate	1.4	0.9	1.9	2.4	2.7
Northern Territory	..	{ No.	1	..	..	..	3
		{ Rate	2.0	..	..	..	7.7
Total ..			1,333	1,179	1,512	1,993	2,196
			2.7	2.3	2.9	3.7	4.0

The rate in 1901 was 4.6 per 10,000, and the decrease to the end of 1921 was, therefore, about 13 per cent.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. South Australia and Tasmania, it will be noted, show the smallest proportion of serious crime, while the rates for New South Wales and the Northern Territory are the highest, the figures for the latter, however, owing to the particular conditions prevailing there being abnormal.

2. *Offences for which Convictions were Recorded at Superior Courts.*—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1917 to 1921. Owing to lack of uniformity in the presentation of the returns the information is confined to the chief offences against the person only.

SUPERIOR COURTS.—CONVICTIONS, SERIOUS CRIME, AUSTRALIA, 1917 TO 1921.

Offences.	1917.	1918.	1919.	1920.	1921.
Murder, and attempts at ..	21	14	34	20	29
Manslaughter	9	7	14	18	17
Rape, and attempts at ..	15	11	3	7	8
Other offences against females ..	79	75	66	69	87
„ „ „ the person	239	155	220	223	235
Total	363	262	337	337	376

The total convictions for similar offences in 1901 amounted to 432, the decline during the period 1901 to 1921 amounting therefore to about 13 per cent.

3. Habitual Offenders.—In New South Wales the Habitual Criminals Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1921 there were 26 persons in prison under this Act. Since the passing of the Act, 83 males and 1 female have been declared to be habitual criminals. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and up to the end of June, 1922, 674 prisoners had been released on probation or parole. Of this number, 216 were re-convicted or returned for not observing the conditions of release, and 458 have not returned to prison. Of the latter, 217 are still on probation or parole, and 233 have completed their probation and are out of the Board's control. At the 30th June, 1922, the number under indeterminate detention was 114. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and 23 criminals had been declared to be habitual offenders up to the end of 1921. Of these, 20 had been released after serving the indeterminate portion, and 3 were serving the definite portion of their sentence. The Criminal Code Amendment Act of 1914, which makes provision for the detention and control of habitual criminals, was assented to in Queensland on the 3rd December, 1914, but up to the end of 1921 no prisoners had been brought under its provisions. In Western Australia, under the Criminal Code Amendment Act of 1918, power is given to declare a prisoner after a certain number of convictions to be an habitual criminal. Six prisoners were sentenced to preventive detention in 1921. During the period in which the Habitual Criminals and Offenders Act of 1907 (now Indeterminate Sentences Act 1921) has been in force in Tasmania, 117 men and 4 women have been released under its provisions, and the results, according to the Sheriff, have been satisfactory, only four prisoners having defaulted. Naturally it will be some time before the full effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales stated, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner, while the Indeterminate Sentence Board in Victoria states that it has become impressed with the advantages which this form of sentence offers, both from a reformatory and deterrent standpoint, over the ordinary sentence.

4. Capital Punishment.—The table below gives the number of executions in each State during the period 1917 to 1921:—

EXECUTIONS, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
New South Wales	2	..	..	..	..
Victoria .. ..	..	2	..	..	..
Queensland .. ..	..	..	..	..	..
South Australia .. ..	..	..	1	1	..
Western Australia .. ..	..	..	..	..	..
Tasmania .. ..	..	..	..	..	..
Total	2	2	1	1	..

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

Under the Criminal Code Amendment Act of 1922 capital punishment was abolished in Queensland.

During the period 1861 to 1880 the annual average number of executions in Australia was nine, from 1881 to 1900 the average was six, for the period 1901 to 1910 the figure stood at four, while the average for the last quinquennium was one.

§ 4. Prisons.

1. Prison Accommodation and Prisoners, 1921.—The table below shows the number of prisons in each State, the accommodation therein, and the number of prisoners in confinement at the end of 1921 :—

PRISON ACCOMMODATION AND PRISONERS, 1921.

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	24	1,500	..	1,273
Victoria	15	1,439	640	733
Queensland	12	601	380	309
South Australia	13	759	466	252
Western Australia	22	681	909	211
Tasmania	2	100	..	95
Northern Territory	3	16	62	4
Total	91	5,096	2,457	2,877

The figures refer to prisoners under sentence, and are exclusive of aborigines.

2. Prisoners in Gaol, 1917 to 1921.—The number of prisoners in gaol at the 31st December in each of the years 1917 to 1921 is given below. As stated above, the figures refer to prisoners under sentence, and are exclusive of aborigines. A separate line is added in each instance showing the proportion per 10,000 of the population.

PRISONERS IN GAOL, 1917 TO 1921.

State.			1917.	1918.	1919.	1920.	1921.
New South Wales	{	Number ..	1,292	959	941	1,128	1,273
	{	Proportion	6.8	5.0	4.7	5.5	6.0
Victoria ..	{	Number ..	689	588	665	700	733
	{	Proportion	4.9	4.1	4.5	4.6	4.8
Queensland ..	{	Number ..	260	255	279	275	309
	{	Proportion	3.8	3.6	3.9	3.7	4.0
South Australia	{	Number ..	268	233	222	229	252
	{	Proportion	6.1	5.2	4.7	4.7	5.1
Western Australia	{	Number ..	195	185	158	167	211
	{	Proportion	6.4	6.0	4.9	5.1	6.3
Tasmania ..	{	Number ..	46	55	72	63	95
	{	Proportion	2.4	2.8	3.5	3.0	4.5
Northern Territory	{	Number ..	12	7	3	3	4
	{	Proportion	24.7	14.4	6.4	7.1	10.2
Commonwealth	{	Number ..	2,762	2,282	2,340	2,565	2,877
	{	Proportion	5.6	4.5	4.5	4.8	5.3

The proportion to population of prisoners in gaol under sentence has fallen by about 5 per cent. for Australia during the last five years, but, if the comparison be carried farther back, the position is seen to be more favourable, the proportion in 1891 being as high as 16 per 10,000.

3. Improvement of Penological Methods.—(i) *New South Wales.* During recent years Australia, in common with most other civilized countries, has introduced considerable modifications and improvements in methods of prison management. Under the old system, punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But in recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. A short account of the reorganization of the prison system in this State appears in preceding Year Books (see No. V., p. 922), but considerations of space preclude its repetition here. At the present time it is found that good results have followed the principles of scientific classification and restricted association of prisoners, together with the provision of separate institutions for the treatment of inebriates. Special efforts are put forward to provide reproductive work of a regular and intelligent nature. At the chief penitentiaries for males and females in the metropolis, a careful classification of prisoners is carried out, and provision is made for the treatment of special cases at some of the larger country gaols. Young first offenders are employed at the Emu Plains Prison Farm, and first offenders over the age of 25 years are drafted to the Prisoners' Afforestation Camp at Tuncurry, on the Manning River. This institution, which was opened in 1911, has given very satisfactory results. Over 176,000 seedlings were planted in 1921, and many thousands of trees, some up to 40 feet in height, are flourishing. The Shaftesbury Inebriate Institution was established in 1915 for the treatment of non-criminal inebriates, and in the following year provision was made for the accommodation and treatment of voluntary paying guests. In many instances prisoners received into the gaols are found to be suffering from contagious diseases, and, under the Prisoners Detention Act such persons may be detained until cured.

Amongst other improvements introduced during the last two years were the relieving of the monotony of non-working hours at week-ends by the provision of concerts and lectures at the principal gaols, by more open-air exercise on Saturday afternoons and Sundays, and by the supply of a greater variety of interesting books and magazines to the prison libraries. As the Comptroller-General points out, these changes have been brought about, not from sympathy with the criminal, but as ordinary necessities to the wholesome functioning of the mind.

In 1902 the system of finger-print identification of criminals was introduced, and in the following year bureaux were established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

(ii) *Victoria.* Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners in various grades to different gaols, while at the important penal establishment at Pentridge careful segregation into several classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed. An afforestation camp known as McLeod Settlement, French Island, was opened in 1916, and on the 30th June, 1922, there were 31 inmates. In addition to the work of afforestation some of the land has been laid down in crops, and a commencement has been made in poultry and pig-keeping. It is stated that the experiment has resulted in improvement, both in demeanour and physique of prisoners, and in many cases has led to a return to honest citizenship. A farm has also been established about 3 miles from the prison at Castlemaine, and the inmates are taken to and fro daily. The number in confinement

on the 30th June, 1922, was 42. Accommodation has been provided for housing a certain number of prisoners on the farm site. The orchard planted in connexion with the farm contains about 1,000 fruit trees. Provision has been made for practical instruction in carpentering and other work which will help in securing employment for prisoners on release.

Under the Venereal Diseases Act, prisoners where necessary receive medical treatment, and after release the treatment where required is continued outside the prison at places gazetted by the Health Department. Provision is also made for dental attention where necessary, the treatment being free if the prisoner is unable to pay or to make arrangements for payment.

(iii) *Queensland.* Queensland prisons have been considerably modernized during the last few years. Amongst recent reforms may be mentioned the provision of a separate institution at Brisbane for long-sentence prisoners, and the extension of the principle of classification and separation. Juvenile offenders, *i.e.*, those between the ages of 16 and 21 years, are kept apart from other prisoners and treated in accordance with the latest reformatory methods. The penal establishment at St. Helena has been converted into a farm colony, and well-conducted prisoners receive special treatment there during the latter stages of their sentences. Greater facilities have been provided for the instruction of prisoners in trades which will afford them a means of earning a livelihood on their release, and the prison libraries have been replenished with useful and interesting literature. Under the provisions of the Health Act, prisoners suffering from venereal disease may be detained until danger of infection has ceased.

(iv) *South Australia.* The present system of gaol administration was drafted mainly on English and European lines by the late W. R. Boothby, C.M.G., and has since been as far as possible adapted to modern penological procedure. At the Yatala Labour Prison, which is the largest in the State, the number in confinement on the 31st December, 1921, was 122. The prisoners are graded into three classes—first offenders, second offenders, and old offenders, the various classes being kept apart. The Adelaide gaol, which had 70 prisoners in confinement at the end of 1921, is the next in point of importance. Provision is made for the special treatment of inebriates at the Adelaide and Gladstone gaols.

(v) *Western Australia.* A Royal Commission in 1911 recommended the adoption of various reforms in connexion with the prison system of Western Australia. The bulk of these were carried out, and included, amongst other things, an extension of the principle of separate treatment, improvement in prisoners' dietary scale, more satisfactory arrangements in regard to remission of sentences, and better conditions in regard to hours of labour, leave of absence, etc., for the staff. Amongst other improvements introduced may be mentioned the grant of an eight hours' day to officers, enlargement and improved hygiene of cells, additional library facilities, assistance to discharged prisoners by provision of railway passes and monetary aid, appointment of committees to look after the welfare of discharged prisoners, and the remodelling of the "mark" system. The military method of control at Rottnest Island, coupled with considerable privileges to well-conducted prisoners, has proved very successful. Under the Prisons Act Amendment Act of 1918 a portion of Fremantle Prison was set aside as a reformatory prison in 1919, and first offenders are kept separate from other prisoners.

(vi) *Tasmania.* The number of convicted prisoners in confinement in Tasmanian gaols on the 30th June, 1922, was 90, of whom 87 were confined in the penal establishment at Hobart and three at the Launceston gaol. There were no prisoners in the country gaols. The completion of alterations to the Hobart gaol has facilitated the classification of offenders, and afforded greater opportunities for teaching trades. Youthful offenders are kept apart from ordinary prisoners.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously the jurisdiction of the courts is by no means uniform in the various States.

LOWER COURTS.—CIVIL CASES, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
New South Wales	{ Cases No.	31,172	32,135	31,847	34,475	37,557
	{ Amount £	88,576	94,026	92,853	111,531	145,176
Victoria	{ Cases No.	32,187	31,870	34,841	38,300	45,319
	{ Amount £	143,469	149,755	155,009	158,198	202,606
Queensland	{ Cases No.	11,867	10,957	9,289	10,428	14,339
	{ Amount £	51,302	53,710	56,555	58,476	84,277
South Australia	{ Cases No.	14,579	13,619	14,600	18,030	20,334
	{ Amount £	42,774	52,847	58,647	73,505	103,715
Western Australia	{ Cases No.	13,798	11,387	11,990	12,306	15,240
	{ Amount £	44,937	40,243	43,601	46,765	63,162
Tasmania	{ Cases No.	4,611	4,489	4,325	4,954	1,442
	{ Amount £	29,080	28,769	30,537	34,329	36,571
Total	{ Cases No.	108,214	104,457	106,892	118,493	134,231
	{ Amount £	400,138	419,350	437,202	482,804	635,507

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts Courts in Queensland, the Local Courts of South Australia and Western Australia, and the Courts of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1917 to 1921.

The New South Wales returns refer to the total amounts sued for, and not the sums actually awarded after trial in the District Courts, and are exclusive of judgments signed in the Supreme Court, for which the amount is not available.

SUPERIOR COURTS.—CIVIL CASES, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
New South Wales	{ Causes No.	862	846	933	1,148	1,344
	{ Amount £	a274,646	a259,902	a333,539	a377,419	a475,816
Victoria	{ Causes No.	573	583	661	760	906
	{ Amount £	88,177	108,919	100,200	122,840	226,736
Queensland	{ Causes No.	126	184	172	225	231
	{ Amount £	27,169	19,994	44,567	19,707	32,513
South Australia	{ Causes No.	13	18	20	39	52
	{ Amount £	..	4,518	3,491	16,938	5,673
Western Australia	{ Causes No.	108	141	138	174	288
	{ Amount £	14,639	30,100	26,757	28,890	54,339
Tasmania	{ Causes No.	326	329	237	145	246
	{ Amount £	20,481	17,453	29,808	14,507	13,651
Total	{ Causes No.	2,008	2,101	2,161	2,491	3,067
	{ Amount £	425,112	440,886	538,362	580,301	808,728

(a) Exclusive of judgments signed, Supreme Court, the amount not being recorded.

3. Divorces and Judicial Separations.—The number of divorces and judicial separations in each State during the period 1917 to 1921 is shown below. The figures refer in the case of divorces to decrees made absolute in each year.

DIVORCES AND JUDICIAL SEPARATIONS, 1917 TO 1921.

State.	1917.		1918.		1919.		1920.		1921.	
	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.	Divorces.	Judicial Separations.
New South Wales	383	13	380	11	427	7	556	11	789	18
Victoria	202	..	233	3	346	2	373	2	388	1
Queensland	16	3	24	2	25	1	45	1	56	2
South Australia	20	1	17	..	30	..	32	2	88	1
Western Australia	24	..	63	..	37	..	29	..	21	..
Tasmania	7	..	4	..	6	2	18	..	40	..
Northern Territory .. ..	..	..	..	..	..	..	..	..	..	..
Total	652	17	721	16	871	12	1,053	16	1,382	22

The average annual number of divorces and judicial separations in Australia at decennial periods from 1871 to 1920 is as follows :—

DIVORCES AND JUDICIAL SEPARATIONS.—AUSTRALIA, 1871 TO 1920.

	1871–1880.	1881–90.	1891–1900.	1901–10.	1911–20.
Averages	29	70	358	401	719

The bulk of the divorces and judicial separations refer to New South Wales and Victoria, the Acts of 1899 and 1889 in the respective States having made the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connexion between the figures.

4. Probates.—The number of probates and letters of administration granted, together with the value of the estates concerned, are given below for each State for the period 1917 to 1921 :—

PROBATES AND LETTERS OF ADMINISTRATION, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
New South Wales	{ Number	6,498	6,877	7,188	5,737	5,461
	{ Value £	11,923,328	11,827,552	17,131,131	12,265,044	13,895,765
Victoria	{ Number	5,835	6,935	7,404	5,837	5,769
	{ Value £	9,486,584	11,009,294	13,844,186	14,672,239	12,554,865
Queensland	{ Number	841	959	1,122	1,027	1,130
	{ Value £	2,796,692	2,335,848	3,733,964	3,594,844	4,039,379
South Australia	{ Number	1,946	2,321	2,319	1,844	1,784
	{ Value £	3,188,871	4,760,203	3,470,000	3,831,914	3,115,106
Western Australia	{ Number	1,176	1,574	1,353	948	1,059
	{ Value £	1,119,024	1,193,841	2,451,828	1,438,192	1,854,099
Tasmania	{ Number	513	435	564	517	518
	{ Value £	844,276	928,317	1,390,836	1,095,536	1,207,252
Total	{ Number	16,809	19,101	19,950	15,910	15,721
	{ Value £	29,358,775	32,055,055	42,021,945	36,897,769	36,666,466

5. Bankruptcies.—(i) *General.* The returns in bankruptcy during each of the last five years are given in the following table.

For several reasons comparisons drawn from these figures are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the methods of procedure thereunder in connexion with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude private arrangements in Victoria, South Australia, and Western Australia, and the liquidations in Queensland and Tasmania.

BANKRUPTCIES, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
New South Wales	Number ..	301	264	316	344	394
	Liabilities £	227,663	221,928	323,222	204,594	311,900
	Assets £	208,093	115,776	189,920	139,550	166,457
Victoria ..	Number ..	222	243	207	186	300
	Liabilities £	152,338	131,247	184,041	154,658	180,044
	Assets £	94,390	77,089	130,328	53,229	92,048
Queensland ..	Number ..	137	170	144	118	150
	Liabilities £	81,148	35,837	68,291	73,853	65,603
	Assets £	29,084	11,694	26,863	57,904	18,760
South Australia	Number ..	108	91	59	60	67
	Liabilities £	122,036	137,469	78,888	81,610	121,937
	Assets £	79,810	109,641	63,724	54,502	96,658
Western Australia	Number ..	56	23	31	25	30
	Liabilities £	46,588	9,559	23,958	46,381	43,944
	Assets £	44,829	4,010	21,190	41,875	35,899
Tasmania ..	Number ..	2	1	..	..	6
	Liabilities £	1,255	912	..	..	1,829
	Assets £	5	118	..	..	1,599
Northern Territory	Number ..	..	..	1	..	..
	Liabilities £	..	..	115	..	..
	Assets £	..	..	7	..	..
Total ..	Number ..	826	792	758	733	947
	Liabilities £	631,028	536,952	678,515	561,096	725,307
	Assets £	456,211	318,328	432,032	347,060	411,421

(ii) *Deeds of Arrangement, etc.* The figures given above are, as explained, exclusive of private arrangements. In Victoria during 1921 the deeds of arrangement numbered 100, the declared liabilities and assets being £186,305 and £140,430 respectively. Liquidations under the Insolvency Act in Queensland numbered 13, the total liabilities and assets amounting to £16,618 and £15,021 respectively. In South Australia 88 compositions were arranged during the year. Under the Bankruptcy Amendment Act of 1898, 11 compositions, 5 schemes of arrangement, and 38 deeds of assignment were made in Western Australia. In Tasmania, 12 liquidations involving liabilities £12,437 and assets £8,282, and 6 compositions with liabilities £1,268 and assets £330, were arranged during 1921.

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction. The powers of the Court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903–20. At present the Court consists of a Chief Justice and six other judges. Sittings of the Court are held in the capitals of the various States as occasion may require. The following statement shows the transactions of the High Court for the quinquennium 1917–21 :—

COMMONWEALTH HIGH COURT.—TRANSACTIONS, 1917 TO 1921.

Items.	1917.	1918.	1919.	1920.	1921.
I. ORIGINAL JURISDICTION.					
Number of writs issued ..	106	76	93	123	155
Number of causes entered for trial ..	18	8	8	20	24
Verdicts for plaintiffs ..	6	4	3	6	13
Verdicts for defendants ..	5	1	..	5	4
Otherwise disposed of ..	47	10	5	31	22
Amount of judgments ..	£6,025	£3,463	£1,730	£6,907	£15,403
II. APPELLATE JURISDICTION.					
Number of appeals set down for hearing	72	67	54	65	68
Number allowed ..	31	33	20	20	31
Number dismissed ..	33	27	25	31	24
Otherwise disposed of ..	8	7	9	14	13
III. AMOUNT OF FEES COLLECTED.					
Amount in each year ..	£619	£708	£502	£675	£742

. During the year 1921 the Court dealt also with other matters as follows :—

Appeals from Assessments under the Taxation Assessment Acts ..	17
Special cases stated for the opinion of the Full Court	16
Applications for Prohibition	2
Applications under the Trading with the Enemy Act	1

7. **Commonwealth Court of Conciliation and Arbitration.**—A more or less detailed statement regarding the operation of this Court, which was established under the provisions of the Commonwealth Conciliation and Arbitration Act of 1904–20, will be found in Chapter XIII.

§ 6. Cost of Administration of Justice.

1. **Expenditure by the State.**—The table below shows the expenditure from Consolidated Revenue during each of the last five years in connexion with the administration of justice in each of the States. Expenditure on police and on prisons are given on separate lines. With regard to the figures quoted for “other” expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large.

STATE EXPENDITURE ON JUSTICE, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
		£	£	£	£	£
New South Wales ..	{ Police	709,649	722,754	977,506	1,101,767	1,150,323
	{ Gaols	90,633	87,875	92,781	113,882	120,136
	{ Other	276,722	277,805	309,632	370,061	400,943
Victoria ..	{ Police	371,413	397,025	490,016	577,407	579,351
	{ Gaols	55,027	54,328	61,937	75,986	74,161
	{ Other	163,381	166,946	193,481	227,190	224,670
Queensland ..	{ Police	337,259	346,802	407,480	476,153	458,955
	{ Gaols	33,626	35,346	36,802	40,190	36,236
	{ Other	128,328	124,763	140,374	149,068	143,592
South Australia ..	{ Police	136,158	151,090	159,258	197,157	211,428
	{ Gaols	22,040	23,063	27,381	31,940	33,359
	{ Other	39,569	41,124	60,784	52,500	54,129
Western Australia ..	{ Police	136,752	136,295	171,832	186,717	184,245
	{ Gaols	22,104	23,939	28,669	30,417	28,715
	{ Other	75,184	71,787	83,546	97,779	89,987
Tasmania ..	{ Police	49,448	54,960	66,940	79,372	79,105
	{ Gaols	6,619	6,418	8,274	9,774	10,097
	{ Other	21,223	21,407	29,289	33,322	34,114
Northern Territory ^a	{ Police	10,210	10,200	11,435	12,970	15,520
	{ Gaols	2,972	3,048	2,663	3,857	4,171
	{ Other	1,991	2,196	1,925	3,396	3,289
Total ..	{ Police	1,750,889	1,819,126	2,284,467	2,631,543	2,678,927
	{ Gaols	233,021	234,017	258,507	306,046	306,875
	{ Other	706,398	706,028	819,031	933,316	950,724

(a) See 2, Federal Expenditure, below.

The rise in expenditure during the last few years was due chiefly to increases in wages and salaries and heavier outlay on stores and supplies.

For the purposes of comparison the figures in the table above have been reduced to a population basis, and the results are given in the table following:—

STATE EXPENDITURE ON JUSTICE PER HEAD, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
		<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
New South Wales	Police	7 5	7 5	9 9	10 8	10 11
	Gaols	0 11	0 11	0 11	1 1	1 2
	Other	2 11	2 10	3 1	3 7	3 10
Victoria	Police	5 3	5 7	6 8	7 8	7 6
	Gaols	0 9	0 9	0 10	1 0	1 0
	Other	2 4	2 4	2 8	3 0	2 11
Queensland	Police	9 10	9 11	11 3	12 9	12 0
	Gaols	1 0	1 0	0 11	1 1	0 11
	Other	3 9	3 7	3 10	4 0	3 9
South Australia	Police	6 2	6 8	6 10	8 1	8 6
	Gaols	1 0	1 0	1 2	1 4	1 4
	Other	1 9	1 10	2 7	2 2	2 2
Western Australia	Police	8 11	8 10	10 9	11 4	11 1
	Gaols	1 5	1 7	1 10	1 10	1 9
	Other	4 11	4 8	5 3	5 11	5 5
Tasmania	Police	5 1	5 7	6 6	7 7	7 5
	Gaols	0 8	0 8	0 10	0 11	0 11
	Other	2 2	2 2	2 10	3 2	3 2
Northern Territory	Police	42 1	41 11	49 2	61 7	79 5
	Gaols	12 3	12 6	11 5	18 4	21 4
	Other	8 2	9 10	8 3	16 1	16 10
Total	Police	7 1	7 3	8 9	9 10	9 10
	Gaols	0 11	0 11	1 0	1 2	1 1
	Other	2 10	2 10	3 2	3 6	3 6

Owing to the smallness of the white population, large area to be policed, and cost of supplies, transport, etc., the figures for the Northern Territory must necessarily appear somewhat abnormal.

The total expenditure in connexion with the administration of justice in the various States has risen from 10s. per inhabitant in 1901 to 14s. 5d. in 1921. Police expenditure increased by 4s. 1d. per head, the average for gaols declined by 1d., while the expenditure on courts and the remaining machinery of justice increased by 5d. per head during the same period. Increased salaries and allowances, and the heavier cost of materials and equipment, were largely responsible for the rise in the rate per head during the last few years.

2. Federal Expenditure.—(i) *High Court.* With the exception of that for the Northern Territory, the expenditure shown in the foregoing tables is that incurred by the State Governments only, and does not include expenditure in connexion with the Federal High Court, which is given hereunder for the period 1916–17 to 1921–22.

EXPENDITURE ON FEDERAL HIGH COURT, 1916–17 TO 1921–22.

Year.			Amount.	Year.			Amount.
			£				£
1916–17	..	..	31,780	1919–20	..	..	34,370
1917–18	..	..	31,352	1920–21	..	..	34,669
1918–19	..	..	30,337	1921–22	..	..	33,776

(ii) *Other Expenditure.* Other items of expenditure during 1921–22 by the Commonwealth Attorney-General's Department include—Secretary's office, £18,358; Crown Solicitor, £18,248; Court of Conciliation and Arbitration, £4,949; Public Service Arbitrator, £4,524. Including the High Court expenditure, but excluding that in connexion with Patents and Copyright, the total expenditure by the federal law authorities in 1921–22 amounted to £103,568.

CHAPTER XI.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz. :—(a) State ; (b) public ; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for the infirm in New South Wales. The second class comprises public institutions of two kinds, viz. :—(i) those partially subsidized by the State or State endowed, but receiving also private aid, and (ii) those wholly dependent upon private aid. To the former division belong such institutions as the principal metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private character are included in the third group. A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible.

No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old-age Pensions, Invalid Pensions, and Maternity Allowances are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to these matters will be found in § 6 and 7 of Chapter VIII.

From time to time relief funds have been organized for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shown the need of urgent relief. Special funds were also raised for persons disabled or bereaved through war. Complete statistical information in regard to these forms of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duty of collectorship in charity appeals. In regard to subscriptions to the various patriotic funds which were instituted in consequence of the war, the total for Australia, up to the 31st December, 1919, was estimated to exceed £12,500,000 sterling.

§ 2. The Larger Charities of Australia.

1. **Hospitals.**—(i) *General.* All the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc.

(ii) *Principal Hospitals in each State.* The particulars given herein refer to general hospitals, and include all institutions affording general hospital relief.

(a) *New South Wales.* A Government hospital, with a staff of 32 medical officers and accommodation for about 700 patients, is established at Little Bay, near Sydney. Altogether, there are four hospitals for women, one for women and children, and three for children in the metropolis. The Royal Prince Alfred Hospital, with a medical staff of 86, and with 584 beds, is the largest metropolitan endowed institution. Amongst other large metropolitan hospitals may be mentioned the Sydney Hospital, with a medical staff of 69 and with 382 beds, St. Vincent's with 44 doctors and 190 beds, and Lewisham with 29 medical attendants and 169 beds. In extra-metropolitan areas the Waterfall Hospital for Consumptives, which is a Government institution, provides accommodation for 408 patients. The Newcastle Hospital has 180 beds and a medical staff of 21. At the Carrington Convalescent Home at Camden there is provision for 110 patients. The hospital in the Broken Hill district can accommodate 162.

(b) *Victoria.* There are several large metropolitan hospitals in Victoria. The largest of these, the Melbourne Hospital, has 358 beds ; the Austin Hospital for Incurables has 290, the Alfred Hospital 168, St. Vincent's 126, and the Homœopathic 98. Amongst the country institutions, Bendigo has 222 beds, Geelong 217, and Ballarat 170.

(c) *Queensland.* Of the metropolitan hospitals, the largest is the Brisbane General, which can accommodate 361 patients. The Children's Hospital has 250 beds, the Diamantina 174, and the Mater Misericordiæ 123. Ipswich Hospital, with 150 beds, is the largest of the country institutions, followed by Toowoomba with 130, Rockhampton

with 110, Townsville with 105, Maryborough 96, Charters Towers, 92, Bundaberg 92, Cairns 84, Mackay 84, and Mt. Morgan 71.

(d) *South Australia.* Including the Consumptive Home and Infectious Diseases Block, the Adelaide Hospital can accommodate a total of 580 patients. The most important of the country hospitals are at Port Augusta, Port Pirie, and Wallaroo, with 72, 58, and 48 beds respectively. The Adelaide Children's Hospital has 98 beds.

(e) *Western Australia.* Information regarding the capacity of the Western Australian hospitals is not available, but some idea of their comparative importance may be gained from the figures relating to cases treated. In the metropolis, 4,201 cases were treated at the Perth Hospital in 1921, and 1,744 at the Perth Children's Hospital. Of the country hospitals, Kalgoorlie returned 1,263 cases, Fremantle 1,116, and Woorlooloo 538.

(f) *Tasmania.* There are well-equipped general hospitals in Hobart and Launceston. The former has a medical staff of 4 and can accommodate 225 patients, and the latter has 190 beds and a medical staff of 3. Hospitals for women have been established in both centres, and there is a sanatorium for consumptives at Newtown. Outside the metropolitan area, the Devon Cottage Hospital has a medical staff of 2 and beds for 82 patients; the Lyell District Hospital can accommodate 44 patients, and there are other institutions in important country centres.

(g) *Northern Territory.* In addition to the hospitals at Darwin and Pine Creek, arrangements have been made for the supply of medicines and first aid to outlying stations.

(iii) *Number, Staff, and Accommodation, 1921.* Details regarding the number of hospitals, staffs, and accommodation for the year 1921 are given in the appended table:—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION, 1921.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Number of Hospitals—								
Government ..	4	53	3	10	22	2	5	404
Other ..	153		91	21	28	12	..	
Total ..	157	53	94	31	50	14	5	404
Medical Staff—								
Males ..	949	101	217	123	54	23	1	1,482
Females ..			8	6	..	..	..
Total ..	949	101	225	129	54	23	1	1,482
Nursing Staff and Attendants—								
Males ..	91	13	312	76	127	2	5	626
Females ..	2,455	932	1,406	612	570	199	10	6,184
Total ..	2,546	945	1,718	688	697	201	15	6,810
Accommodation—								
Number of dormitories, etc. ..	1,071	443	573	228	223	133	8	2,679
Capacity, in cubic feet ..	8,422,242	4,835,223	4,120,262	1,799,931	2,398,304	1,396,109	60,912	23,032,986
Number of beds, etc. ..	7,142	3,635	3,701	1,395	1,750	679	40	18,342
Cubic feet to each bed ..	1,179	1,330	1,113	1,290	1,366	1,892	1,523	1,256

(iv) *Patients Treated.* The table hereunder furnishes particulars respecting patients treated for the year 1921. It may be noted that in addition to the accommodation provided in the ordinary wards, a considerable amount of accommodation for certain classes of cases is furnished in out-door or verandah sleeping places, but full particulars in connexion therewith are not available. So far as the returns show, there were 903 out-door beds in New South Wales, 47 in South Australia, 2 in Western Australia, 59 in Tasmania, and 20 in the Northern Territory. These figures are not included in the totals given in the table above.

GENERAL HOSPITALS.—PATIENTS TREATED, 1921.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Indoor Relief: Persons Treated—								
Males	50,540	19,520	27,016	7,495	9,002	4,836	166	118,575
Females	46,494	15,713	16,728	6,412	6,346	4,927	83	96,703
Total	97,034	35,233	43,744	13,907	15,348	9,763	249	215,278
Inmates at beginning of Year—								
Males	2,740	1,273	1,472	501	633	270	29	6,918
Females	2,226	1,021	866	281	369	253	7	5,023
Total	4,966	2,294	2,338	782	1,002	523	36	11,941
Admissions and Re-admissions during Year—								
Males	47,800	18,247	25,544	7,820	8,369	4,566	137	112,483
Females	44,268	14,692	15,862	7,040	5,977	4,674	76	92,589
Total	92,068	32,939	41,406	14,860	14,346	9,240	213	205,072
Discharges—Recovered :								
Males	34,424	15,662	23,350	4,865	4,066	4,217	138	86,722
Females	35,549	13,061	14,732	4,894	3,796	4,344	75	76,451
Total	69,973	a 28,723	a 38,082	9,759	7,862	a 8,561	213	163,173
Relieved :								
Males	8,583	b	b	1,742	3,077	b	..	c
Females	5,371	b	b	1,238	1,652	b	..	c
Total	13,954	b	b	2,980	4,729	b	..	c
Unrelieved :								
Males	1,589	66	493	417	339	79	..	2,983
Females	1,166	77	313	298	204	97	..	2,155
Total	2,755	143	806	715	543	176	..	5,138
Not stated :								
Males .. ..	..	598	161	44	..	17	..	820
Females .. ..	..	373	92	60	..	16	..	541
Total .. ..	..	971	253	104	..	33	..	1,361
Deaths—								
Males	3,294	1,989	1,607	697	899	313	12	8,811
Females	2,199	1,099	793	444	430	189	4	5,158
Total	5,493	3,088	2,400	1,141	1,329	502	16	13,969
Inmates at end of Year—								
Males	2,650	1,205	1,405	556	621	210	16	6,663
Females	2,209	1,103	798	387	264	281	4	5,046
Total	4,859	2,308	2,203	943	885	491	20	11,709
Average Daily Number Resident—								
Males	} 5,773	2,309	2,420	{ 563	617	241	18	} 13,032
Females								
Total	5,773	2,309	2,420	1,005	987	516	22	13,032

(a) Including relieved.

(b) Included in recovered.

(c) Not available.

(v) *Summary for Five Years, 1917 to 1921.* Comparative particulars for the last five years of the number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, are given in the following table. Only general hospitals are tabulated, since the working of "special" institutions is not properly comparable with those which treat every class of case.

GENERAL HOSPITALS.—SUMMARY, AUSTRALIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
Number of institutions ..	399	393	393	393	404
Number of beds ..	16,763	17,000	17,390	17,890	18,342
Admissions during year ..	164,889	174,379	193,920	202,053	205,072
Indoor patients treated ..	174,387	184,176	202,929	211,332	215,278
Deaths ..	11,885	12,494	15,758	14,475	13,969
Expenditure .. £	1,396,361	1,543,162	1,798,297	2,099,601	2,332,116

In addition to those admitted to the institutions, there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases places the total at about 300,000.

(vi) *Revenue and Expenditure.* The revenue and expenditure for the year 1921 were as follow :—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1921.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
	£	£	£	£	£	£	£	£
Revenue—								
Fees of patients, etc.	148,756	65,966	53,954	36,477	44,695	25,196	713	375,757
Government grants	507,268	64,552	246,967	127,224	101,031	43,088	6,265	1,096,395
Other ..	406,621	244,653	168,865	35,037	32,052	7,533	..	894,761
Total ..	1,062,645	375,171	469,786	198,738	177,778	75,817	6,978	2,366,913
Expenditure—								
Salaries ..	398,106	314,980	174,709	59,815	72,830	31,480	2,506	1,918,968
Maintenance ..	411,713		235,543	93,005	95,770	24,752	3,759	
Buildings ..	160,499		45,897	36,273	3,485	2,820	361	
Other ..	88,963		16,935	7,338	3,225	16,112	..	
Total ..	1,059,281	346,220	473,084	196,431	175,310	75,164	6,626	2,332,116

2. *Benevolent and Destitute Asylums.*—(i) *General.* A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced—the large flow of immigration of sixty and seventy years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of persons no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in Australia have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the

predominating function of the institution is aid to the destitute, it has been included amongst benevolent asylums. In Victoria, nine of the hospitals are also benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

(ii) *Principal Institutions.* The principal institutions of this nature in each State are as follows :—

(a) *Government Asylums for the Infirm, New South Wales.* There are five asylums for the infirm maintained by the Government—four for men and one for women. Rookwood, the largest of these, had in 1921 an average number resident of 1,338, Newington 674, and Liverpool 629. At the Cottage Homes, situated at two separate localities in Parramatta, the average number resident was about 493. The State Labour Depot and Refuge at Randwick had 97 inmates during 1921.

(b) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. In 1920–21, the average daily number of indoor patients was 1,917, and there were 414 distinct cases of outdoor relief.

(c) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 1,259 beds. The most important of these is at Dunwich (Stradbroke Island) with 1,141 beds, while there are small institutions at Nundah, Rockhampton, and Toowoomba. At the end of 1921 the inmates of the four institutions numbered 1,179.

(d) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide, and at the Aged Men's Home, Beaumont. The former institution includes lying-in and children's departments. In the asylum the number of inmates at the end of 1921 was 380; in the Beaumont Home it was 76.

(e) *Homes for the Destitute, Western Australia.* There are two of these homes in Western Australia supported by public funds. The Old Men's Home at Claremont had 583 inmates at the end of 1921, and the Women's Home, Fremantle, which receives children also, had 81 adult inmates.

(f) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. The New Town Infirmary and Consumptive Home, with 220 beds, had 195 inmates at the end of June, 1921, and the Home for Invalids, Launceston, with 23 beds, had 22 inmates on the same date.

(iii) *Revenue and Expenditure.* Details regarding revenue and expenditure for the year 1921 are given in the following table :—

BENEVOLENT ASYLUMS.—REVENUE AND EXPENDITURE, 1921.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
Revenue—							
Government aid ..	173,120	22,855	54,190	45,060	19,940	11,471	326,636
Municipal aid ..	..	805	..	..	..	..	805
Public subs., legacies, etc.	5,966	14,085	1,546	25	..	..	21,622
Fees	24,274	18,643	..	5,768	8,749	3,558	60,992
Other	3,961	7,699	1,169	2,644	..	1,135	16,608
Total ..	207,321	64,087	56,905	53,497	28,689	16,164	426,663
Expenditure—							
Buildings	4,160	3,234	5,510	241	..	141	13,286
Maintenance ..	195,457	61,795	50,993	53,183	28,689	11,172	401,289
Other	9,149	3,027	375	82	..	4,851	17,484
Total ..	208,766	68,056	56,878	53,506	28,689	16,164	432,059

3. Orphanages, Industrial Schools, etc.—(i) General. The organization of charitable effort varies greatly in regard to orphans and waifs. In many institutions, shelter and some form of industrial training are offered to destitute children of all classes whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The expenditure on orphanages in 1921 was £176,717.

(ii) Principal Institutions. The principal institutions in each State are as follows:—

(a) New South Wales. The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the treatment of them by those to whom they are boarded out. Provision is made for instruction in various trades and callings.

There are also orphanages, farm homes, country homes for children, etc., with upwards of 1,900 children under care.

There are several reformatory and industrial schools maintained by the State. At the Parramatta Industrial School for Girls, to which a Training Home was attached in 1912, there were on 31st December, 1921, 153 inmates. At the Farm Home for boys, Gosford, there were 76 inmates at the end of 1921.

(b) Victoria. There are ten orphanages in Victoria, with 1,772 beds. The daily average of the inmates was 1,795 in 1920–21. The expenditure in the same year was £46,736.

At the end of 1921 there were three industrial and five reformatory schools in the State. Of these, one in each class is wholly controlled by the Government, being used merely as a receiving and distributing depot. The children are sent thence to situations, foster homes, or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends, or licensed out.

(c) Queensland. There are twelve orphanages in Queensland. The number under care on 31st December, 1921, was 1,198, and the expenditure for the year, £30,428.

There are also six industrial and reformatory schools, which had 183 boys and 59 girls under detention at the end of 1921.

(d) South Australia. The State Children's Department exercises a supervision over the probationary and industrial schools and the reformatories. The total number of admissions into these institutions in 1921–22 was 268. The number of inmates on the 30th June, 1922, was 255, in addition to which 1,509 were placed out, or had been adopted or apprenticed. There were no deaths amongst children in industrial schools and reformatories, and of those placed out and in other institutions nine died.

There are three orphan asylums. The number under care during 1921 was 328, and the number of inmates on 31st December, 1921, was 256. There was one death during the year, and the expenditure amounted to £3,412.

(e) Western Australia. In Western Australia there were, at the end of 1921, five orphanages, five orphanages and industrial schools, and two industrial schools, containing 476 boys and 447 girls. There were also 20 boys and 27 girls at the Government Receiving Depot at the 30th June, 1922.

(f) Tasmania. There are three industrial schools and one orphanage under benevolent institutions in the State. Admissions in 1920–21 numbered 43, and average daily number of inmates was 149. One death occurred during the year. The expenditure was £4,607.

The Newtown Training School for boys had 53 inmates at the end of June, 1921.

(iii) *Transactions of State Departments.* The following table summarizes the transactions in 1921 of State Departments for the relief of neglected children :—

STATE RELIEF OF NEGLECTED CHILDREN.—SUMMARY, 1921.

Particulars.	N.S.W. (a)	Vic.	Q'land.	S. Aust.	W. Aust.	Tas. (b)	Total.
Number of children in institutions, boarded out, or on probation—							
Males	3,129	3,421	1,632	793	483	264	9,722
Females	2,310	2,805	1,275	691	613	250	7,944
Total	5,439	(c) 6,226	2,907	1,484	1,096	514	17,666
Number of children boarded out with their own mothers—							
Males	11,854	7,534	2,464	1,073	268	..	26,938
Females			2,415	1,051	279	..	
Total	11,854	7,534	4,879	2,124	547	..	26,938
Total	17,293	13,760	7,786	3,608	1,643	514	44,604
	£	£	£	£	£	£	£
Gross cost to State of children's relief ..	457,626	294,660	197,607	49,236	23,319	13,602	1,036,050
Receipts, from parents' contributions, etc. ..	8,921	12,280	12,101	5,738	5,556	953	45,549
Net cost	448,705	282,380	185,506	43,498	17,763	12,649	990,501

(a) For year ending 5th April following. (b) For the year ended 30th June, 1922. (c) Excluding 24 incapacitated children maintained by the State. (d) Excluding 1,844 children (915 males and 929 females) placed with licensed foster-mothers and others.

4. *Lepers.*—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Peel Island, near Brisbane, and Dayman Island, Torres Strait); and the Northern Territory (Mud Island). Two deaths occurred in the latter in the year 1921–22. Quarantine and isolation stations have also been used for the segregation of patients. Up to 1915, 545 cases of leprosy had been recorded in the Commonwealth (between the calendar years 1916 to 1922 inclusive there were 40 deaths from this cause), while at the 31st December, 1921, there were 22 lepers in the Little Bay lazaret.

5. *Hospitals for the Insane.*—(i) *General.* The method of compiling insanity statistics has been fairly uniform throughout the States, but differences in diagnosis of the early stages of the disease introduce an element of uncertainty which considerably reduces the value of comparison.

(ii) *Number of Hospitals, Staff, etc., 1921.* Particulars regarding the number of institutions, medical and nursing staff, and accommodation are given in the appended table for the year 1921 :—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, ACCOMMODATION, 1921.

Particulars.	N.S.W.	Vic.(a)	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Number of Institutions—							
Government	9	9	3	1	3	1	26
Private	3	(b) 5	..	..	1	..	9
Total	12	14	3	1	4	1	35
Medical Staff—							
Males	22	21	6	3	3	2	57
Females	1	..	1	..	..	..	2
Total	23	21	7	3	3	2	59
Nursing Staff and Attendants—							
Males	664	583	221	96	132	56	1,752
Females	557	543	169	87	68	64	1,488
Total	1,221	1,126	390	183	200	120	3,240
Accommodation—							
Number of dormitories ..	(c) 353	(c) 1,396	557	(f) 44	407	..	..
Capacity, in cubic feet ..	(c) 3,582,976	(c) 3,630,553	1,922,291	(f) 714,714	878,590	..	..
Number of beds ..	(c) 6,303	5,299	2,506	1,245	1,186	685	17,224
Cubic feet to each bed ..	{ (d) 600 (e) 1,000 }	{ .. 685 }	767	(f) { (c) 605 (g) 1,684 }	{ 1,283 }	..	..

(a) Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong Hospitals. (b) There are five private licensed houses in Victoria, in which there were 99 cases at the end of 1921. Complete figures for these private asylums are not available. (c) Government hospitals only. (d) Ordinary dormitory. (e) Hospital dormitory. (f) Information not available. (g) Private hospitals.

(iii) *Patients Treated, 1921.* Information regarding patients treated, deaths, etc., for the year 1921 is given in the table hereunder :—

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, DEATHS, ETC., 1921.

Particulars.	N.S.W.	Vic.(a)	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Admissions and re-admissions during year—							
Males	819	383	267	148	94	44	1,755
Females	658	419	187	124	65	46	1,499
Total	1,477	802	454	272	159	90	3,254
Discharges—Recovered—							
Males	324	81	128	57	25	14	629
Females	290	113	93	50	26	15	587
Total	614	194	221	107	51	29	1,216
Relieved and unrelieved—							
Males	98	74	12	42	56	7	289
Females	69	77	8	29	21	14	218
Total	167	151	20	71	77	21	507

(a) Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, DEATHS, ETC., 1921— continued.

Particulars.	N.S.W.	Vic.(a)	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Absconders not retaken—							
Males	9	8	..	..	1	..	18
Females .. .. .	..	..	..	..	..	..	..
Total	9	8	..	..	1	..	18
Deaths—							
Males	386	242	140	51	56	17	892
Females	220	198	65	45	36	17	581
Total	606	440	205	96	92	34	1,473
Number of patients on books at end of year—							
Males	4,485	2,869	1,745	656	760	292	10,807
Females	3,485	2,973	1,008	534	344	292	8,636
Total	7,970	5,842	2,753	1,190	1,104	584	19,443
Average daily number resident—							
Males	4,269	2,613	1,750	661	769	292	10,354
Females	3,122	2,646	993	540	358	295	7,954
Total	7,391	5,259	2,743	1,201	1,127	587	18,308
Number of patients on books at end of year per 1,000 of population—							
Males	4.14	3.75	4.30	2.60	4.26	2.65	3.86
Females	3.84	3.78	2.49	2.14	2.19	2.69	3.19
Persons	3.75	3.77	3.58	2.37	3.48	2.67	3.53
Average number of patients resident in hospitals for insane per 1,000 of mean population—							
Males	3.98	3.45	4.34	2.65	4.33	2.71	3.73
Females	3.02	3.39	2.75	2.18	2.30	2.79	2.96
Persons	3.51	3.42	3.59	2.41	3.38	2.75	3.35

(a) Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. The figures for admissions, etc., include absconders captured and re-admitted. Very few escapees succeed in avoiding capture.

(iv) *Summary for Australia, 1917 to 1921.* The table hereunder gives in summarized form particulars regarding hospitals for the insane in Australia for each of the five years 1917 to 1921. It may be pointed out that licensed houses (except as regards expenditure) are included in the totals for New South Wales and Victoria, while in the latter State the figures are exclusive of reception houses and observation wards in gaols:—

HOSPITALS FOR THE INSANE.—SUMMARY, AUSTRALIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
Number of institutions (a) ..	34	34	35	35	35
Number of beds	16,808	17,176	17,308	17,468	17,224
Admissions	3,054	3,192	3,323	3,501	3,254
Discharged as recovered, relieved, etc.	1,456	1,406	1,565	2,302	1,723
Deaths	1,306	1,383	1,699	1,483	1,473
Expenditure £	875,963	951,439	1,116,676	1,414,055	1,398,148

(a) Exclusive of receiving wards at general hospitals, and including licensed houses for insane in Victoria.

(v) *Number of Insane, 1917 to 1921.* The proportion of insane, as well as the total number returned as under treatment, has changed very little during recent years. In the next table the number of insane under official care in Australia is given, together with the proportion of insane per 1,000 of population.

The number of insane persons in institutions in Australia at the end of each of the years 1917 to 1921 was as follows:—

INSANE PERSONS IN INSTITUTIONS, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
NUMBER.					
New South Wales	7,340	7,581	7,544	7,889	7,970
Victoria	5,833	5,915	5,846	5,830	5,842
Queensland	2,590	2,623	2,703	2,745	2,753
South Australia	1,176	1,153	1,187	1,194	1,190
Western Australia	1,066	1,123	1,148	1,166	1,104
Tasmania	570	575	578	578	584
Total	18,575	18,970	19,006	19,402	19,443

PER 1,000 OF POPULATION.

New South Wales	3.82	3.86	3.70	3.77	3.75
Victoria	4.12	4.12	3.89	3.82	3.77
Queensland	3.77	3.72	3.66	3.65	3.58
South Australia	2.63	2.52	2.46	2.43	2.37
Western Australia	3.41	3.62	3.51	3.52	3.48
Tasmania	2.88	2.83	2.75	2.72	2.67
Australia	3.73	3.73	3.58	3.58	3.53

For the period embraced in the tables Victoria shows the highest rate of insanity, roughly 1 in 260 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in South Australia a considerably lower insanity rate has prevailed, averaging about 1 in 420, Tasmania following closely with an average of about 1 in 360.

Consequent upon the development of a more rational attitude towards the treatment of mental cases, a greater willingness is being shown to submit afflicted persons to treatment at an earlier stage than formerly. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity. It is important to bear this in mind, because the small progressive increase in the numbers in the first of the immediately preceding tables is probably to be attributed largely, if not solely, to this circumstance.

(vi) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in the five years 1917 to 1921 shows that hereditary influences have been the chief factor, more than one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, etc., have also been a fruitful source. Cases due to intemperance in drink range from one in nine to one in thirteen.

INSANITY.—PERCENTAGE OF CAUSES, AUSTRALIA, 1917 TO 1921.

Causes, Previous History, etc.	1917.	1918.	1919.	1920.	1921.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety ..	9.7	9.9	8.4	9.3	10.6
Intemperance in drink ..	10.5	10.2	8.7	10.9	7.7
Hereditary influence, ascertained ; congenital defect, ascertained ..	21.8	22.1	21.1	23.7	21.2
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life	6.0	4.9	5.8	6.0	7.5
Previous attacks	14.1	14.6	12.4	12.5	11.5
Accident, including sunstroke ..	1.9	1.5	1.8	1.7	0.8
Old age	9.8	9.4	8.1	10.6	9.2
Venereal disease	(a)	(a)	(a)	7.1	5.6
Other causes ascertained ..	26.2	27.4	33.7	18.2	25.9
All ascertained causes ..	100.0	100.0	100.0	100.0	100.0

(a) Not available.

(vii) *Length of Residence in Hospital.* (a) *New South Wales.* No particulars are available regarding the average length of residence in hospitals during the year of persons who died or were discharged.

There are also three State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In one of the gaols, observation wards have been instituted with similar functions.

(b) *Victoria.* No particulars are available as to the average length of residence in hospitals during the year of persons who died or were discharged.

There are lunacy wards in two of the general hospitals ; also a State receiving house where persons are placed for observation, and subsequently discharged or transferred to asylums.

(c) *Queensland.* The average residence in the institutions of those who died during the year was 8 years 35 days for males and 9 years 172 days for females ; and of those who were discharged, 288 days for males and 1 year 69 days for females.

There are also three reception houses for insane, which act as depots to which patients are sent with a view to determining whether their mental illness is of a merely temporary character, easily relieved, or is of such a nature as to need further treatment at the State asylums.

(d) *South Australia.* The average residence of those who died was 7 years and 2 months for males and 7 years 7 months for females ; of those discharged, 1 year and 11 months for males and 1 year and 4 months for females.

(e) *Western Australia.* The period of residence of those who died during the year averaged about 5 years for males and 3 years 8 months for females ; of those who were discharged, 3 years and 2 months for males and 2 years and 3 months for females.

(f) *Tasmania.* The period of residence of those who died was 16 years 1 month for males and 11 years 5 months for females ; that of those discharged, 1 year and 9 months for males and 1 year and 11 months for females.

(viii) *Revenue and Expenditure, 1921.* The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 87 per cent.

HOSPITALS (GOVERNMENT) FOR THE INSANE.—FINANCES, 1921.

Particulars.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Government Grants ..	449,025	340,875	196,972	85,085	84,886	41,528	1,198,371
Fees of Patients ..	77,661	39,070	17,951	14,197	8,895	6,628	164,402
Other ..	2,022	3,910	1,639	976	..	999	9,546
Total ..	528,708	383,855	216,562	100,258	93,781	49,155	1,372,310
Expenditure—							
Salaries ..	202,610	182,870	114,818	30,479	54,101	24,725	699,603
Maintenance ..	217,953	172,634	67,680	44,131	39,680	23,879	565,957
Buildings ..	..	22,976	36,173	25,071	..	551	84,771
Other ..	40,056	5,375	1,809	577	..	..	47,817
Total ..	550,619	383,855	220,480	100,258	93,781	49,155	1,398,148

(a) Year ended 30th June, 1922.

6. Protection of Aborigines.—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the Boards. The native race is extinct in Tasmania. The approximate annual expenditure on maintenance, etc., is—New South Wales, £35,000; Victoria, £4,000; Queensland, £21,000; South Australia, £27,000; Western Australia, £35,000; Northern Territory, £3,000; total for Australia, £125,000. In 1921 in New South Wales the average number receiving monthly aid was 1,906; in Victoria there were 331 under the care of the Aborigines Protection Board; in Queensland, at the end of 1921, there were 3,437 aborigines at the mission stations; in South Australia, in 1920, there were 823 inmates at mission stations, while in Western Australia the aborigines and half-castes in the native institutions in the year 1921-22 numbered 460. At the mission stations in the Northern Territory about 300 were in residence, but casual assistance and medical attendance are given to large numbers of natives every year.

7. Royal Life Saving Society.—In each of the State capitals, "centres" of the Royal Life Saving Society have been established. Life preservation is the object of the Society, and its immediate aims are (a) educative and (b) remedial. By stimulating the acquirement of the art of swimming in schools, colleges, clubs, etc., it is desired to bring about a widespread and thorough knowledge of natation and life-saving; while life-belts, reels, lines, and other first-aid appliances are provided on ocean beaches and at places where they are likely to be in demand. Upwards of 3,000 certificates of proficiency in various grades are issued annually after examination.

8. Royal Humane Society.—The Royal Humane Society of Australasia has for its objects (a) to grant awards for skill, promptness, and perseverance in life saving; (b) to provide assistance in cases of danger and apparent death; (c) to restore the apparently drowned; (d) to collect and circulate the latest information regarding approved methods and apparatus for life saving. Awards of medals and certificates are made numbering about 100 annually. Upwards of 350 lifebuoys have been provided at various places on the coasts, rivers, lakes, and reservoirs in the various States. Swimming is encouraged amongst school children, and awards are made for proficiency.

9. Other Charitable Institutions.—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded range from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods in those that exist for the relief of the aged and infirm. The institutions not so particularized include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires and mining accident relief funds, etc.

10. State Expenditure on Charities.—The table below gives the amount expended on charities in each of the last five years, the figures for the various States being compiled, as far as possible, on the same basis :—

STATE EXPENDITURE ON CHARITIES, 1917 TO 1921.

State or Territory.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
New South Wales ..	863,713	962,901	1,148,360	2,391,057	2,540,606
Victoria ..	543,225	541,817	578,055	1,230,566	1,459,163
Queensland ..	372,342	417,743	516,944	933,547	1,017,817
South Australia ..	191,748	166,250	195,687	416,303	520,879
Western Australia ..	178,477	249,361	289,404	451,738	475,802
Tasmania ..	88,445	95,867	121,371	199,206	206,513
Northern Territory ..	4,488	4,156	6,178	(a)6,178	6,265
Total ..	2,242,438	2,438,095	2,855,999	5,628,595	6,227,045

(a) Expenditure for 1920 not available.

11. Total Receipts.—The total receipts in Australia by hospitals, charities, benevolent institutions, and societies affording public relief, including the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, amounted in 1921 to about £6,331,000.

CHAPTER XII.

PUBLIC HYGIENE.

§ 1. Public Health Legislation and Administration.

1. **General.**—(i) *Commonwealth.* The Commonwealth Department of Health, which was created on the 3rd March, 1921, and commenced its administration as from the 7th March, 1921, is controlled by the Commonwealth Minister of Health. The Department was formed by the extension and development of the Commonwealth Quarantine Service, the Director of Quarantine becoming the Commonwealth Director-General of Health and Permanent Head of the Department.

The functions of the Department are as follows:—

The administration of the Quarantine Act : The investigation of causes of disease and death and the establishment and control of laboratories for this purpose : The control of the Commonwealth Serum Laboratories and the commercial distribution of the products manufactured in those laboratories : The methods of prevention of disease : The collection of sanitary data, and the investigation of all factors affecting health in industries : The education of the public in matters of public health : The administration of any subsidy made by the Commonwealth with the object of assisting any effort made by any State Government or public authority directed towards the eradication, prevention, or control of any disease : The conducting of campaigns of prevention of disease in which more than one State is interested : The administrative control of the Australian Institute of Tropical Medicine : The administrative control of infectious disease amongst discharged members of the Australian Imperial Forces : Generally to inspire and co-ordinate public health measures : Any other functions which may be assigned to it.

The Department controls the Australian Institute of Tropical Medicine at Townsville, and the campaign in connexion with hookworm disease. These matters, together with the control exercised by the Department over malaria and bilharziasis introduced by returned soldiers and sailors, are dealt with separately in subsequent pages in this chapter (see § 5). Reference to the Commonwealth Serum Laboratories will be found in § 4, 5.

(ii) *New South Wales.* The Department of Public Health is controlled by the Minister of Public Health. The Director-General of Public Health is the chief executive officer, and is assisted by various staffs—medical, bacteriological, chemical, veterinary, dairy inspection, meat inspection, sanitary, pure food, and clerical. The work of the Department extends over the whole of the State, and embraces all matters relating to public health and the general medical work of the Government, the Director-General of Public Health holding the position of Chief Medical Officer of the Government as well as being permanent head of the Department.

The Board of Health has certain statutory duties imposed upon it by various Acts of Parliament, and the Director-General is President of the Board. These duties consist largely in supervision of the work of local authorities (Municipal and Shire Councils), so far as that work touches upon public health matters connected with the following Acts:—Public Health Act 1902, Public Health (Amendment) Acts 1915 and 1921, Dairies Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Pure Food Act 1908, Private Hospitals Act 1908, and Venereal Diseases Act 1918. The Board further possesses certain powers connected with public health matters under the Local Government Act 1919. The Board of Health is a nominee Board, created in 1881 and incorporated in 1894.

The Director-General of Public Health acts independently of the Board of Health as regards the State hospitals and asylums, and the various public hospitals throughout the State which receive subsidies from the Government.

(iii) *Victoria.* In this State the Public Health Acts 1915, 1919, and 1922 are administered by a Commission composed of the Chief Health Officer and six members appointed by the Governor-in-Council. The medical and sanitary staffs of the Commission consist of (a) the chief health officer, who is also chairman, (b) six district health officers and three assistant health officers, (c) chief sanitary engineer and assistant sanitary engineer, three building surveyors and four building inspectors, and (d) ten health inspectors. The main function of the Commission is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspection as to the sanitary condition of various districts, and the sampling of articles of food. The supervision of the sanitary condition of milk production is under the Dairy Supervision Branch of the Department of Agriculture, but distribution is supervised by the Commission. Acts administered by the Department of Public Health are:—The Health Acts (in which is now included the Adulteration of Wine Act), the Pure Food Act, the Meat Supervision Act, and the Cemeteries Act, which includes the Cremation Act. The Department administers also the Midwives Act, the Goods Act, and the Venereal Diseases Act.

(iv) *Queensland.* The Public Health Acts 1900 to 1922 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the Department includes a health officer, a medical officer for the tuberculosis bureau, two medical officers for venereal diseases, fourteen food and sanitary inspectors, one staff nurse, in addition to rat squads in Brisbane. Northern offices, in charge of inspectors, are located at Rockhampton, Townsville, and Cairns, whilst another inspector is stationed at Toowoomba. A laboratory of micro-biology and pathology, in charge of a medical director, is controlled by the Department, and performs a wide range of micro-biological work for the assistance of medical practitioners and the Department.

One function of the Department is to stimulate and advise local sanitary authorities on matters pertaining to the Health Acts, and, where necessary, to rectify or compel rectification, at the cost of the local authority, of sanitary evils produced by local inefficiency or apathy. Its powers and responsibilities were widely increased by the Amending Acts of 1911, 1914, 1917, and 1922.

(v) *South Australia.* The Central Board of Health in South Australia consists of five members, three of whom (including the chairman, who is permanent head of the Department) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 to 1918 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 188 of these local Boards under the general control and supervision of the Central Board. A chief inspector and one inspector under the Health and Food and Drugs Acts periodically visit the local districts, and see generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908 to 1922), who, in company with an analyst, visits country districts, and takes samples of milk, which are analyzed on the spot. There are three nurse inspectors employed in advising and assisting local Boards in connexion with outbreaks of infectious diseases. In the outlying districts there are fifteen inspectors directly responsible to the Board. The Venereal Diseases Act 1920, which provides for the prevention and control of venereal diseases, has not yet been proclaimed.

(vi) *Western Australia.* The legislation in this State is the Health Act 1911, with the amending Acts of 1912 (2), 1915, 1918, and 1919, which have been partly consolidated and reprinted as "The Health Act 1911-19." Further amending Acts were passed in 1920 and 1921. The central authority is the Department of Public Health, controlled by a Commissioner, who must be a qualified medical practitioner. The local authorities comprise:—(a) Municipal Councils, (b) Road Boards where the boundaries of a Health District are coterminous with those of a Road District, and (c) Local Boards of Health.

composed of persons appointed by the Governor. These local Boards are only utilized where neither Municipal Councils nor Road Boards are available. Generally speaking, the Act is administered by the local authorities, but the Commissioner has supervisory powers, also power to compel local authorities to carry out the provisions of the Act. In cases of emergency, the Commissioner may exercise all the powers of a local health authority in any part of the State.

All the usual provisions for public health legislation are contained in the Act, and, in addition, provision is made for the registration of midwifery nurses, the medical examination of school children, the control of public buildings (*i.e.*, theatres, halls, etc.), the control of food, and the provision of standards therefor. The amending Acts of 1915 and 1918 deal exclusively with venereal diseases.

(vii) *Tasmania*. The office of Director of Public Health was established under the Director of Public Health Act 1920, and the person holding the office of Chief Health Officer under the Public Health Act 1903 at the time of the passing of the first-named Act is the Director of Public Health, and is also the permanent head of the Department. This officer has very wide powers, and in the event of the appearance of dangerous infectious disease (small-pox, plague, etc.) in the State, is vested with supreme power, the entire responsibility of dealing with such an outbreak being taken over by him from the local authorities. Local executive is vested in local authorities, who possess all legal requirements for the efficient sanitary regulation of their districts. Controlling and supervisory powers over these bodies are possessed by the Department of Public Health, and many of the powers conferred upon them may be converted into positive duties. One function of the Department is to advise local authorities on matters pertaining to the Health Act, and, where necessary, to rectify sanitary evils produced by local inefficiency or apathy. The Department has four full-time inspectors, who assist and instruct the local sanitary inspectors, but full-time district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to forty-nine since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

The Public Health Acts 1917 and 1918 deal with venereal diseases. Regulations under the Public Health Act 1903, as amended, for checking or preventing the spread of any infectious disease, came into force in February, 1918.

The Places of Public Entertainment Act 1917 is administered by the Director of Public Health under the Minister. This Act provides, *inter alia*, for the licensing and regulation of places of public entertainment, for the appointment of a censor or censors of moving pictures, and for the licensing of cinematograph operators. Comprehensive regulations have been framed under the Act. Inspectors under the Public Health Act 1903 are Inspectors of Places of Public Entertainment under this Act.

§ 2. Inspection and Sale of Food and Drugs.

1. **General.**—Under the Acts referred to later and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported or which are entered for export.

2. **Commonwealth Jurisdiction.**—Under Section 51 (i) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Federal Parliament passed the Commerce (Trade Descriptions) Act 1905, to which reference has already been made in Chapter VI., p. 221.

3. State Jurisdiction.—The inspection and sale of food and drugs is also dealt with in each State, either under the Health Acts or under Pure Food Acts. This work is carried out in each State by the Executive Officer of the Health Department. There is, in addition, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of bread and meat. The supply and sale of milk are also subject to special regulations or to the provisions of special Acts.

The general objects of these Acts are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug or article ; and the cleanliness of receptacles, places, and vehicles used for their manufacture, storage or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also is the mixing or selling of food or drugs so as to be injurious to health.

Power is given to any authorized officer to enter any place for the purpose of inspecting any article to be used as a food or drug, and also to inspect articles being conveyed by road, rail or water. The officer may take samples for analysis or examination and may seize for destruction articles which are injurious to health or unwholesome. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

In every State except Queensland, Advisory Committees have been appointed for the purpose of prescribing food standards and for making recommendations generally, with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities.

4. Food and Drug Standardization.—Conferences with the object of securing uniformity in these matters were held in Sydney in 1910, and in Melbourne in 1913. The resolutions of the latter conference were submitted to the Premiers' Conference held in Melbourne in March, 1914, and in conformity with the determinations arrived at, each State issued regulations which have had the effect of ensuring uniformity throughout Australia.

5. Sale and Custody of Poisons.—In New South Wales, Victoria, Western Australia and Tasmania, the enactments for regulating the sale and use of poisons are administered by the Pharmacy Boards in the respective States. In South Australia, the sale of poisons is provided for by regulations under "The Food and Drugs Act 1908," administered by the Central Board of Health. In Queensland, the sale of poisons is under the control of the Health Department.

In New South Wales and Tasmania the Government subsidizes the Pharmacy Board, in order to enable it to carry out the provisions of the Poisons Act. The subsidy to the Victorian Board was withdrawn in March, 1921, provision having been made for the payment of a 10s. licence fee under the Poisons Act 1920.

No persons, other than legally qualified medical practitioners and registered pharmaceutical chemists, are permitted to sell poisons, without special licence from the bodies administering the legislation in the respective States. These licences are issued to persons in business distant from four to five miles from a registered chemist, on production of certificates from medical practitioners, police, or special magistrates or justices as to the applicant's character and fitness to deal in poisons. Annual licence fees, ranging from 5s. to 40s., are charged. New poisons regulations were approved in Queensland on the 1st April, 1920, amongst which are stringent restrictions on the sale of cyanide of potassium. A revised list of standard poisons was gazetted in Western Australia in December, 1922.

The special conditions attaching to the sale of poisons are alluded to on p. 1055 of Official Year Book No. 12.

Partial exemptions from the regulations are made in some States in the case of sales of poisons for agricultural, horticultural and photographic purposes, in so far that any person may sell such poisons subject to the restrictions as to the class of container and the manner in which they may be sold. The sale of what are generally known as industrial poisons—such as sulphuric acid, nitric acid, hydrochloric acid, soluble salts of oxalic acid, etc.—is governed by regulations, as also is the sale of poisons for the destruction of rats,

vermin, etc. Under the existing laws these poisons are allowed, in most of the States, to be sold by anyone. The Victorian Parliament, in December, 1920, passed an amending Poisons Act, in which the word "wholesale" has for the first time been defined as meaning "sale or supply for the purposes of re-sale," providing for an annual fee of 10s. and the issuing of licences to dealers in exempted poisons. A new principle is introduced into the Victorian Poisons Act of 1920. Certain drugs are declared to be "potent drugs" and may be sold by pharmaceutical chemists only. These drugs include acetanilid, adrenalin, oil of tansy, pituitary extract, thyroid gland preparations, and any serum or vaccine for human use. Under the Victorian "Dangerous Drugs Regulations, 1922," which came into effect on the 1st January, 1923, further restrictions were imposed on the manufacture and sale of habit-forming drugs such as morphine, opium, heroin, cocaine, veronal, etc.

§ 3. Supervision of Dairies, Milk Supply, etc.

1. **General.**—In Official Year Book No. 12 and preceding issues, allusion is made in general terms to the legislation in force in the various States to ensure the purity of the milk supply and of dairy produce generally, but limits of space preclude the repetition of this information in the present issue.

2. **Number of Dairy Premises Registered.**—The following table shows, so far as the particulars are available, the number of dairy premises registered and the number of cattle thereon. Compulsory registration is not in force throughout the whole area of the various States.

DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1922.

Particulars.	N.S.W.	Victoria.	Q'land. (a)	S. Aust.	W. Aust. (b)	Tasmania.
Premises registered ..	20,658	15,130	13,500	1,473	929	(c)
Cattle thereon ..	907,336	180,388	448,634	9,193	11,079	68,595

(a) For year 1920.

(b) For year 1921.

(c) Not available.

3. **New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required under penalty to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registration must be applied for prior to commencing trade, and must be renewed annually. The Chief Dairy Inspector is in charge of all inspectorial work under the Dairies Supervision Act 1901, and has assisting him fourteen qualified dairy inspectors, each in charge of a district. During 1922, samples of milk numbering 13,799, and of food and drugs numbering 758 were taken from the vendors for examination, and 12,258 dairy premises were inspected. Where necessary, warnings and prosecutions followed. A sum of over £2,000 was imposed in fines for adulteration, want of cleanliness, etc.

4. **Victoria.**—The registration, inspection and supervision of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle and grazing grounds are provided for by the Dairy Supervision Acts 1915, and the Milk Supply Act 1922, administered by the Minister of Agriculture. Under the Health Act, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, and to institute prosecutions in case of adulterated or unwholesome food. During 1921, 1,143 samples of milk were analysed by the Public Health Department. By the end of the year 1921, 117 municipal districts, comprising about one-third of the area of the State,

had been brought under the operation of the Dairy Supervision Act. The municipal councils have the option of carrying out the administration of the Act or of deciding that the work should devolve upon the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for Departmental administration.

The Milk Supply Act 1922 provides for the appointment of a Milk Supply Committee with power to issue regulations to govern the milk supply of the metropolis, and to disseminate information concerning the best methods of handling the product.

The Council of any metropolitan municipality, or a group of councils acting together may establish depots at which milk may be bought, treated, and sold. The Committee may, however, issue certificates authorizing persons to sell milk, but, in an area in which there is a municipal depot, no milk may be sold unless it has been treated in a depot or, by approved methods, in a factory. Milk sold in containers must have the grade specified on the label. A laboratory is to be established to carry out researches in matters relating to milk.

5. **Queensland.**—The control and supervision of the milk supply, of dairies, and of the manufacture, sale, and export of dairy produce are provided for by the Dairy Produce Act 1920, administered by the Department of Agriculture and Stock. This Act and the regulations made thereunder apply only to prescribed districts which comprise the whole of the coastal district from Rockhampton down to the New South Wales border, and the Darling Downs, Maranoa, Mackay, and Cairns districts. In certain proclaimed areas the sale of milk is restricted to persons licensed under the Milk Sellers' Regulations of 1917. Milk for sale is supervised by inspectors of the Health Department under the Health Acts 1900–1922. During the year ended 30th June, 1922, 380 samples of milk were analysed.

6. **South Australia.**—The Food and Drugs Act 1908, and the Regulations made thereunder, provide for the licensing of vendors of milk, and the registration of dairies, milk stores and milk shops. The Metropolitan County Board carries out the requirements of the metropolitan area. In the country, the majority of local authorities have not made statutory provision for the licensing of vendors of milk and the registration of dairy premises; and, in consequence, the Central Board of Health provides for such under the Act.

7. **Western Australia.**—Under the provisions of the Health Act control of dairies throughout the State is in the hands of the Public Health authorities. The premises of dairymen and milk vendors must be registered by a local authority. The inspectors under the Act supervise the sanitary condition of the premises, the examination of herds being carried out for the Health Department by officers of the Department of Agriculture. Inspection of herds is made at regular intervals, and the tuberculin test is applied in cases of suspected disease.

8. **Tasmania.**—Local authorities are responsible for the dairies in their respective districts. By-laws for the registration and regulation of dairies have been drafted by the Public Health Department, and in the majority of cases have been adopted by the local authorities. By the Food and Drug Act, which came into force in March, 1911, milk sampling is carried out by the local authorities. During 1913, attention was drawn by circular to the requirements of local authorities with regard to dairies, and a special report is now required before licences are granted. An Act also provides for the registration and inspection of dairies and other premises where dairy produce is prepared, and regulates the manufacture, sale, and export of dairy produce. The Government Analyst examined 231 samples of milk in the year ended 30th June, 1922.

§ 4. Prevention and Control of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts in regard to the compulsory notification of infectious diseases and the precautions to be taken against the spread thereof may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases, including Venereal Diseases; and (c) Vaccination.

2. Quarantine.*—(i) General. The Quarantine Act is administered by the Commonwealth Department of Health, and uniformity of procedure has been established in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to inter-state movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of inter-state quarantine of animals and plants is left in the hands of the States. The Commonwealth possesses stations in each State for the purposes of human and also of animal quarantine.

(ii) Administration of Act. The administration of the Act in respect of the general division, *i.e.*, vessels, persons, and goods, and human diseases, is under the direct control of the Commonwealth in all States except Tasmania. A medical chief quarantine officer, with assistant quarantine officers, has been appointed in each State. This officer is charged with responsible duties, and is under the control of the Director-General of Health. In Tasmania, the chief health officer of the State acts as chief quarantine officer, and payment is made to the State for his services. The administration of the Act in the Northern Territory has been combined with that of Queensland under the chief quarantine officer for the North-eastern division. The administration of the Acts and Regulations relating to overseas animal and plant inspection and quarantine is carried out by the officers of the State Agricultural Departments acting as quarantine officers.

(iii) Chief Provisions of Act. The Act provides for the inspection of all vessels including air-vessels, from overseas, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Vessel" is defined as "any ship, boat or other description of vessel or vehicle used in navigation by sea or air." "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General by proclamation, to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General, by proclamation, to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv) Proclamations. The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for overseas vessels; declare certain places beyond Australia to be places infected or as places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; fix the quarantine lines, and define mooring grounds in certain parts of Australia.

(v) Miscellaneous. At present, instead of all overseas vessels being examined in every State, as was formerly the case, those arriving from the east and west are now examined only at the first port of call, and pratique is given for the whole of the Commonwealth except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon overseas vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. Notifiable Diseases.—A. General.—(i) Methods of Prevention and Control. Provision exists in the Health Acts of all the States for precautions against the spread and for

* From information furnished by the Commonwealth Director-General of Health.

the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and, on his default, on the person in charge of or in attendance on the patient, and on his default, on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(ii) *New South Wales.* The proclamation and notification of infectious diseases are dealt with in Part II. of the Public Health Acts 1902 and 1915. Notification of infectious disease must be made to the local authority by the head of the family, etc., and by the medical practitioner. Provision is made for the disinfection or destruction of premises. Restrictions are placed upon the attendance at school of children suffering from infectious disease or residing in a house in which infectious disease exists. Special provisions have been made with regard to typhoid fever, tuberculosis, small-pox and leprosy, and legislation has also been passed dealing with venereal diseases.

(iii) *Victoria.* Under the Health Act 1919 any disease may be declared to be notifiable throughout the State. The occupier of a house containing a case of infectious disease, and also the medical practitioner, must report the fact to the Council. The Medical Officer of Health may order the removal of a patient to a hospital when such is available. The occupier of the house must also inform the head teacher of the school of any child suffering from notifiable disease or residing in an infected dwelling. The notification of venereal diseases is dealt with in the Venereal Diseases Act 1916.

(iv) *Queensland.* Part VII. of the Health Act 1917–1922 stipulates that all cases of infectious disease must be notified by the occupier of the house, and the medical practitioner attending the case. Restrictions are placed on the attendance at school of children suffering from a notifiable disease. Special measures must be taken against typhoid, small-pox, and venereal diseases. Leprosy is dealt with under the Leprosy Act 1892.

(v) *South Australia.* Cases of infectious diseases must be reported to the local board, under the provisions of Part VIII. of the Health Act 1898. The duty of notification rests primarily on the head of the family, and, in addition, the medical practitioner must also report the case. Children suffering from, or resident with a person suffering from, an infectious disease must not attend school till they hold a certificate that there is no risk of infection. Venereal diseases will be dealt with under the provisions of the Venereal Diseases Act 1920 which, however, is not yet in operation.

(vi) *Western Australia.* The Health Acts 1911 to 1922 provide for the notification and control of infectious diseases, including venereal diseases. The occupier of a house containing a case of infectious disease, and the medical practitioner, must report the case to the local authority. Children may not attend school within three months of suffering from any infectious disease unless they possess a certificate of freedom from infection. Special provisions apply to typhoid fever, tuberculosis, and venereal diseases.

(vii) *Tasmania.* The provisions regarding the notification and prevention of infectious diseases are contained in the Public Health Act 1903 and amending Acts. Notification of cases devolves upon the medical practitioner or the occupier of the house. Special measures are provided for dealing with typhoid, small-pox, and venereal diseases.

(viii) *Diseases Notifiable in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross:—

DISEASES NOTIFIABLE UNDER THE HEALTH, ETC., ACTS IN EACH STATE.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.
Acute lobar pneumonia ..	..	..	..	(c)	+	..
Anthrax ..	..	+	..	+	+	..
Ankylostomiasis ..	..	+	+	..	..	..
Beri-beri ..	..	..	..	..	+	..
Bilharziasis ..	..	+	+	+	+	+
Bubonic plague ..	+	+	+	+	+	+
Cerebro-spinal fever ..	+	+	+	+	..	..
Cerebro-spinal meningitis ..	+	+	+	+	+	+
Chicken-pox ..	..	..	..	..	..	+
Cholera ..	..	+	+	+	+	+
Colonial fever ..	..	..	..	..	+	..
Continued fever ..	..	+	+	..	+	..
Dengue fever ..	..	..	..	..	+	..
Diphtheria ..	+	+	+	+	+	+
Dysentery ..	..	+	+(a)	..	+	..
Encephalitis lethargica ..	..	+	..	..	..	..
Enteric fever ..	+	+	+	+	+	+
Erysipelas ..	..	..	+	+	+	..
Favus ..	..	..	..	+	..	..
Hæmaturia ..	..	+	+	..	+	+
Infantile paralysis ..	+	+	+	+	+	+
Influenza ..	..	..	+(a)	+(c)	+	..
Leprosy ..	+	+	+	+	+	+
Low fever ..	..	..	..	..	+	..
Malarial fever ..	..	+	+	+	+	+
Malta fever ..	..	..	..	..	+	..
Measles ..	..	..	..	+	..	..
Membranous croup ..	+	+	+	+	+	..
Pneumonic influenza ..	..	..	..	+(c)	+	..
Polioencephalitis ..	..	+	..	..	..	..
Poliomyelitis anterior acuta ..	+	+	+	+	+	+
Puerperal fever ..	..	+	+	+	+	+
Pulmonary tuberculosis (phthisis)	+(a)	+	+	+	+	+
Pyæmia ..	..	..	..	..	+	..
Relapsing fever ..	..	..	+	+	+	..
Scarlet fever ..	+	+	+	+	+	+
Scarlatina ..	..	+	+	+	+	+
Septicæmia ..	..	+	..	..	+	..
Small-pox ..	+	+	+	+	+	+
Trichinosis ..	..	..	..	+	..	..
Tuberculosis ..	..	+	..	..	..	..
Tuberculosis in Animals ..	..	..	..	+	..	..
Typhoid ..	+	+	+	+	+	+
Typhus fever ..	..	+	+	+	+	+
Venereal Diseases:—						
Chancroid (soft chancre) ..	+	+	+	+(d)	+	+
Gleet ..	+	..	..	+(d)	..	..
Gonorrhœa ..	+	+	+	+(d)	+	+
Gonorrhœal ophthalmia ..	+	..	..	+(d)	..	..
Infective granuloma of the pudenda ..	+	+	+	+(d)	+	..
Ophthalmia neonatorum ..	..	+	..	..	+	+
Syphilis ..	+	+	+(b)	+(d)	+	+
Venereal warts ..	+	..	+	+(d)	..	..
Whooping cough ..	..	..	..	+	..	..
Yellow fever ..	..	+	+	+	+	..

(a) Notifiable in certain areas only. (b) Primary and secondary stages only. (c) In South Australia influenza vera is notifiable, and any febrile toxic-septicemic condition similar to influenza, including pneumonic influenza. (d) Act not yet in operation.

B. Venereal Diseases.—(i) *General.* The prevention and control of venereal diseases are undertaken by the States. Each State has a Venereal Diseases Act, or provisions in the Health Act govern the working of the measures taken to combat these diseases. In every State notification has been made compulsory. A list of notifiable forms of venereal complaints appears on page 525. Steps have been taken to ensure free treatment by medical practitioners or in subsidized hospitals. Registered pharmaceutical chemists are allowed to dispense prescriptions only when signed by medical practitioners. Clinics have been established, and, in some cases, beds in public hospitals have been set aside for patients suffering from these diseases.

Penalties may be imposed on a patient who fails to continue under treatment. Clauses are inserted in the Acts which aim at preventing the marriage of any patient or the employment of an infected person in the manufacture and distribution of foodstuffs.

The Commonwealth Government has granted a subsidy of £15,000 per annum to the various States to assist in providing hospital treatment and administrative control. The supervision of this work, in so far as it relates to the expenditure of the subsidy, is undertaken by the Commonwealth Department of Health. In February, 1922, a conference was held to consider the means of securing the best results from this subsidy.

(ii) *New South Wales.* The Venereal Diseases Act 1918 came into operation on 1st December, 1920. The Act, which is administered by a Commissioner, aims at ensuring that all cases of venereal disease will have immediate and continued treatment. Clinics are being established at subsidized hospitals. Notification is compulsory; a person suffering from the disease is required to place himself under the treatment of a medical practitioner or to attend a hospital within three days of becoming aware of the existence of the disease, and to continue treatment until a cure is effected. During 1922, notifications numbered 6,298.

(iii) *Victoria.* Under the Venereal Diseases Acts 1916 and 1918 the control of venereal disease is undertaken by the Commission of Public Health. The Acts provide for compulsory treatment by qualified medical practitioners of all persons suffering from the disease. All hospitals in receipt of State aid treat patients. Three evening and three day clinics have been established at hospitals in Melbourne, and in June, 1918, a special departmental clinic was instituted. Notification of the disease is compulsory, and 5,584 cases were notified in 1922. Between the 17th June, 1918, and 31st December, 1922, 9,893 cases were treated at the special departmental clinic, the attendances numbering 358,585.

(iv) *Queensland.* The Health Act 1917 confers power on the Commissioner of Public Health to deal with the prevention and control of venereal disease, and affected persons must place themselves under treatment by a medical practitioner. Persons other than medical practitioners are prohibited from treating the disease. Subsidized hospitals are required to make provision for the examination and treatment of cases reported to them, and clinics have been established in Brisbane. Notification is compulsory, and during the year ended 30th June, 1922, 1,815 cases were reported. Visits to the Brisbane clinics numbered 6,232 by males, and 940 by females.

(v) *South Australia.* The provisions of the Venereal Diseases Act 1920 (not yet in operation) are to be carried out by the Inspector-General of Hospitals. The Minister administering the Act may arrange with any public hospital to provide free accommodation and treatment, and may also establish hospitals and arrange for free examinations and free supply of drugs. Persons suffering from venereal disease will be compelled to consult a medical practitioner or attend a hospital and place themselves under treatment. No person other than a medical practitioner may attend or prescribe for patients.

(vi) *Western Australia.* The Health Act gives power to the Commissioner of Public Health to deal with venereal diseases, and persons suffering from these diseases must consult a medical practitioner and place themselves under treatment. No treatment may be given except by qualified medical practitioners. Free examination and treatment are given by subsidized hospitals.

(vii) *Tasmania*. The Public Health Act 1917-1918 authorized the Director of Public Health to take steps for the control of venereal diseases, and persons affected must place themselves under the care of a medical practitioner or of a hospital. The State-aided hospitals are required to provide treatment. During 1921, 473 cases were notified, the great majority of which received free treatment at the principal public hospitals.

4. **Vaccination.**—(i) *General*. In New South Wales there is no statutory provision for compulsory vaccination, though in all the other States such provision has been made. Jennerian vaccine for vaccination against small-pox is prepared at the Commonwealth serum laboratories in Melbourne. A moderate demand exists for the vaccine in Victoria, but in the other States the normal requirements are small. During the years 1912, 1913, and 1914, the output of the vaccine in doses from the depot was respectively 65,000, 570,000, and 146,000. The number of doses issued in 1913 was, however, abnormal, and was due to the epidemic of small-pox which broke out in Sydney at the end of June, this being followed by large numbers of vaccinations in each State.

(ii) *New South Wales*. Although there is no provision for compulsory vaccination, public vaccinators have been appointed. No statistics are available as to the proportion of the population who have been vaccinated, but a report of the Principal Medical Officer of the Education Department states that out of 55,740 children medically examined during 1919, 9,487, or 17 per cent., had been vaccinated.

(iii) *Victoria*. Compulsory vaccination, subject to a "conscience" clause is enforced throughout the State under Part VII. of the Health Act 1919. From the year 1873 up to 31st December, 1918, it is estimated that 72 per cent. of the children whose births were registered were vaccinated. Free lymph is provided. The number of children vaccinated during 1922 was 2,721, or about $7\frac{1}{2}$ per cent. of the births registered.

(iv) *Queensland*. Although compulsory vaccination is provided for under Part VII. of the Health Act 1900-1922, its operation has not been proclaimed. Vaccination thus being purely voluntary, medical practitioners do not notify vaccinations.

(v) *South Australia*. The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is administered by the vaccination officer of the State. Under this Act vaccination was compulsory, but in 1917 an Act to suspend compulsory vaccination was passed. There were no vaccinations reported in 1922.

(vi) *Western Australia*. Vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter, seeing that under the Health Act 1911, a "conscientious objection" clause was inserted, which is availed of by the majority of parents. The number of children vaccinated is very small. All district medical officers are public vaccinators, but they receive no fees for vaccinations.

(vii) *Tasmania*. All infants are nominally required under the Vaccination Act 1898 to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. Information in regard to vaccinations in recent years is not available.

(viii) *Persons Vaccinated 1918 to 1922*. Information regarding the number of vaccinations in recent years is not available for all States, and in those States for which figures are supplied the returns are incomplete. In Victoria 2,721 children were vaccinated during 1922, the annual average for the last five years being 8,060. In South Australia there were no vaccinations recorded in 1922, and the average for the last five years was only 13. Information is not available for the other States.

5. **Commonwealth Serum Laboratories.**—The establishment for the preparation of Jennerian Vaccine situated at Royal Park, near Melbourne, formerly known as the "Calf Lymph Depot" was greatly enlarged by the Commonwealth authorities. The remodelled institution is designated the "Commonwealth Serum Laboratories," and forms a branch

of the Commonwealth Department of Health. The list of bacteriological preparations produced by the laboratories has been extended so as to cover practically the whole range of biological products, thus forming a valuable national provision for the protection of public health.

6. Health Laboratories.—The Commonwealth Department of Health has established Health Laboratories at Rabaul, New Guinea, and at Bendigo, Victoria, and arrangements are being made for the organization of similar laboratories in other parts of Australia.

The laboratory at Rabaul is carried on in conjunction with the hookworm campaign, and is working in close co-operation with the health organization of the New Guinea Administration.

The Bendigo Laboratory was opened in 1922. Besides carrying on the ordinary diagnostic and educational work of a health laboratory, it is undertaking, by means of an excellent X-ray equipment, the examination, diagnosis and treatment of persons suffering from miner's disease and tuberculosis.

§ 5. Tropical Diseases.

1. General.—The remarkable development of parasitology in recent years, and the increase in knowledge of the part played by parasites in human and animal diseases, have shown that the difficulties in the way of tropical colonization, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are coming more and more under control, and the improvements in hygiene which science has accomplished lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonization by European races. In Australia, the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, occur in many of the tropical and sub-tropical parts.

2. Transmission of Disease by Mosquitoes.—(i) *Queensland.* The existence of filariasis in Queensland was first discovered about thirty-seven years ago. The parasite of this disease (and probably of dengue fever also), is transmitted by *Culex fatigans*, the mosquito most prevalent in Queensland. The *Stegomyia fasciata*, conveyor of yellow fever, is another common domestic mosquito throughout Eastern Queensland during the summer, but so far has never been infected from abroad. Occasional limited outbreaks of malaria occur in the northern parts of the State; one at Kidston, in 1910, resulted in 24 deaths. The infection was traced to newcomers from New Guinea. Allusion to the efforts made to deal with the mosquito, under the Health Act of 1911, will be found in Official Year Book No. 12, p. 1063. By an Order in Council, the local authorities are now responsible for the taking of measures for the destruction, and the prevention of breeding, of mosquitoes.

(ii) *Other States.* In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filariasis has never been discovered. Mosquito-borne diseases are unknown in Victoria, South Australia, and Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used, both by municipalities and private individuals, to destroy larvæ of mosquitoes at various places in these States.

(iii) *Northern Territory.* While the Territory is conspicuously free from most of the diseases which cause such devastation in other tropical countries, malaria exists, and, although cases rarely end fatally, the Administration is taking measures for the destruction of mosquito larvæ wherever settlements or permanent camps are formed, and precautions are being taken to prevent the collection of stagnant water in such localities.

3. Control of Introduced Malaria and Bilharziasis.—(i) *General.* The control of returned sailors and soldiers suffering from malaria and bilharziasis, which was undertaken by the Commonwealth Department of Health at the request of the Departments of Defence and Repatriation, is still being carried out in conjunction with State Health Departments.

(ii) *Malaria.* Steps were taken to have all recrudescences in returned sailors, soldiers and nurses in all parts of Australia notified direct to the Commonwealth Department of Health by the Medical Officers of the Repatriation Local Committees. Malaria is also notifiable to each State Health Department, except in New South Wales, and particulars of such notifications are passed on to the Commonwealth Department of Health.

Treatment on intensive lines has been regularly carried out in connexion with malaria recurrences in returned sailors and soldiers in order to effect a cure as rapidly as possible. Steps were also taken to prevent the settlement of malaria-infected individuals in localities such as irrigation areas, where mosquitoes capable of carrying malaria were known to exist.

From information received, it is evident that in the great majority of cases cure has now been established, and that where recrudescences do occur they have been greatly reduced in severity and frequency. The number of foci of infection has thus been very largely lessened and the danger of spread of malaria in the community correspondingly minimized.

(iii) *Bilharziasis.* With few exceptions the men who contracted this disease on active service have been brought in from all parts of Australia for expert re-examination and treatment.

Those who have suffered from the disease, and have undergone treatment as indicated above, are still kept under periodical observation, but owing to the success of the measures already taken it is not anticipated that there is any danger of widespread infection. Action is being taken in the case of a small number of men who have evaded treatment.

4. Hookworm.—An investigation made in Papua in 1917 by an officer of the International Board of Health of the Rockefeller Foundation disclosed the fact that half of all natives examined were infected with hookworm disease. In 1918, an investigation was undertaken in Queensland, and the prevalence of the disease and its effects in retarding growth and development were found to be greater than had been supposed. In October, 1919, the Australian Hookworm Campaign was begun. This campaign was supported jointly by the Commonwealth, the International Health Board of the Rockefeller Foundation, the State of Queensland, and the other States in which work in this direction was undertaken. By the end of 1922, the survey of Australia and its dependencies had been completed. The total number of examinations and treatments, including those in Dr. Waite's survey in Papua and the earlier work in Queensland, was as follows :—

People examined for hookworm disease	..	..	274,974
Found to be infected with hookworms	..	..	54,168 (19.7%)
Treated free by the Australian Hookworm Campaign	..	..	111,845*
Found to be cured on re-examination	..	..	10,267*

Endemic hookworm infection was found in intermittent areas along the eastern coast of Australia from Cape York to Macksville in New South Wales. The higher summer rainfall in these areas appears to be chiefly responsible for the localization of the infection. It is also found in the vicinity of Broome and Beagle Bay in Western Australia, in the northern part of the Northern Territory, and along the eastern coast of the Gulf of Carpentaria. In the Territory of Papua, 59.2 per cent. of the natives were found to be infected, and in the Territory of New Guinea, 74.2 per cent. There is no endemic hookworm infection in Victoria, South Australia, Tasmania, the interior of Queensland, New South Wales, except the north-eastern part, and Western Australia except the far north.

* Only part of the people treated were re-examined to find out whether they were cured. The total number cured was, therefore, much larger than shown.

Metalliferous mines were examined in Victoria, South Australia, New South Wales, Tasmania, and Western Australia, and were found entirely free from hookworm infection. The examination of metalliferous mines in Queensland showed either no infection or a light infection which may have originated chiefly outside the mines. Coal mines in Victoria, Tasmania, and Western Australia were free of infection. Examinations were made in the coal mines of the Newcastle district, and among 1,226 miners examined in about 25 mines only five infected miners were found. In the Ipswich group of coal mines in Queensland, 31.5 per cent. of the miners were infected, and in the Howard-Torbanlea group (Queensland) 75.8 per cent. were infected. Recommendations have been made with regard to the correction of the insanitary conditions responsible for these high infection rates.

In the latter part of 1922, the scope of the campaign was widened to include a malaria and filaria survey in co-operation with the Division of Tropical Hygiene, Commonwealth Department of Health. During the same year, work was begun under a new plan of permanent hookworm control involving systematic visits to infected areas, and the adjustment of the intensity and frequency of the control measures on the basis of a "hookworm index" determined annually.

Wherever operations are carried on by the hookworm campaign, emphasis is placed on the prevention of hookworm disease, in contrast to temporary relief through the curing of existing cases, and much work has been done to improve methods of night-soil disposal, and to teach the people the danger from soil pollution.

5. **Institute of Tropical Medicine, Townsville.**—The Australian Institute of Tropical Medicine was founded at Townsville in January, 1910. Since 7th March, 1921, the Institute has been administered by the Commonwealth Department of Health. A full account of the activities of this Institute will be found in Official Year Book No. 15, pp. 1010–1012.

§ 6. Medical Inspection of School Children.

1. **General.**—The health of school children is now recognized as a fundamental concern of modern Education Departments, and the medical branches have proved their value both to children and parents.

Medical inspection of school children is carried out more or less thoroughly in all the States. Medical staffs have been organized, while in some States travelling clinics have been established to deal with dental, ocular, and other defects.

2. **New South Wales.**—In 1913, the school medical service was re-organized so as to embrace every pupil whose parents desired such inspection. During the past three years, the extra-metropolitan schools were visited for the third time, thus completing the third round of the State. Owing to the shortage of staff the inspection of the metropolitan schools has been incomplete.

During the three triennial periods ended 1922, 612,414 children were examined, and 355,765 (58 per cent.) were found to be suffering from physical defects requiring treatment. Only about 46 per cent. of these cases received treatment, but the parents or guardians of the remaining 54 per cent. made no attempts to secure alleviation.

In the last triennium, 180,089 children were medically examined (exclusive of those dealt with by the travelling hospital and travelling dental clinics). Of this total 92,553 (51 per cent.) were recorded as defective. The chief defects were:—Dental 74,476 cases; nose and throat, 25,152 cases; vision, 10,598 cases; and hearing, 5,029 cases.

During 1921, 28,679 children were treated either by the departmental medical officers, or outside agencies such as hospitals, lodge doctors, etc., while 1,978 children received medical attention from the travelling hospital, and 15,894 were treated for dental defects at the metropolitan dental clinic and the six travelling dental clinics.

The staff of the department includes eleven medical officers, six dentists, and nine nurses.

3. **Victoria.**—The system of medical inspection aims at examining the child three times in its school life, but in the High Schools the students are examined every two years. After the examination, the parents are notified of defects and are advised to obtain treatment from their own doctor or dentist, and in the metropolitan area a nurse follows up these cases. Attached to the department is a well-equipped dental centre which deals with about 650 children each month from the metropolitan schools.

During the year ended 30th June, 1922, 12,116 children were medically examined, and 6,709 received dental treatment. In addition, the nurses of the Bush Nursing Association examine the school children in their districts and report to the medical officers of the Education Department who, in their turn, advise whether medical attention is necessary for the children.

The staff of the medical branch consists of four medical officers, two dentists, three dental assistants, and a school nurse.

4. **Queensland.**—In matters affecting the general administration of the medical branch of the Department of Public Instruction, the Department acts on the advice of the Commissioner of Public Health. There is no permanent professional officer in charge of the work, the medical inspection being carried out by local medical practitioners as part-time officers who examine a large number of children each year, and refer those who need treatment to the hospitals. A staff of seven dentists carries out dental inspection and treatment. Particular attention is paid to diseases of the eyes and tonsils. In the Western Districts, where ophthalmic diseases are rife, the medical officers in charge of district hospitals are employed to treat cases promptly and thereby prevent the spread of infection.

In 1921, 26,138 children were medically examined, of whom 3,661 were found to be suffering from physical defects. The departmental dentists examined 17,150 children. Extractions numbered 11,022, fillings 10,875, and other treatments 5,896.

5. **South Australia.**—Medical inspection embraces the examination, at least twice in their school life, of all children attending the primary schools, and the report to parents of defects likely to interfere with educational progress. The staff consists of one medical inspector, a trained nurse, and a dentist. The dentist attends remote country schools and treats children. The Medical Inspector meets the parents after the examination of the children, reports any defect, and recommends treatment. It is found that a personal talk is of greater value than any written notice.

Children to the number of 4,139 were examined by the medical officer, and a considerable number of defects was disclosed. The school dentist gave treatment to 757 children in the country districts.

6. **Western Australia.**—Under the Public Health Act 1911–1920, the medical officers of health appointed by the local authorities became medical officers of schools and school children. In the Health Department there is one medical officer for schools, whose duty it is to conduct medical examinations. During 1921, 3,307 children were examined.

7. **Tasmania.**—To Tasmania belongs the credit of being the first State in Australia to provide for the systematic medical inspection of State school children. As far back as 1906, 1,200 children from the Hobart State schools were examined. At the present time two part-time medical officers conduct examinations of school children in Hobart and Launceston. There are also four nurses, whose chief duty is to visit the homes to advise the parents as to the treatment of any defects disclosed by the medical examination. Country schools are inspected by two whole-time medical officers. In 1921, the medical officers examined 8,511 children.

Dental clinics have been established at Hobart and Launceston, and two additional dentists have been appointed to visit the country schools.

§ 7. Supervision and Care of Infant Life.

1. **General.**—The number of infantile deaths and the rate of infantile mortality for the last five years are given in the following table, which shows that during the period 1918 to 1922 no less than 41,423 children died before reaching their first birthday. With the exception of New South Wales for the year 1921, the rate of mortality in the metropolitan area has in every case been consistently greater than that for the remainder of the State. Further information regarding Infantile Mortality will be found in Chapter XXV.—Vital Statistics :—

INFANTILE DEATHS AND DEATH RATES, 1918 TO 1922.

State.	Metropolitan.					Remainder of State.				
	1918.	1919.	1920.	1921.	1922.	1918.	1919.	1920.	1921.	1922.
NUMBER OF INFANTILE DEATHS										
New South Wales ..	1,252	1,509	1,693	1,437	1,292	1,741	1,977	2,051	1,981	1,665
Victoria ..	1,175	1,278	1,616	1,381	1,101	776	869	1,053	1,201	835
Queensland ..	393	504	446	382	347	714	840	835	719	660
South Australia ..	299	350	459	452	347	283	358	351	332	223
Western Australia ..	233	226	321	318	247	173	198	217	293	205
Tasmania ..	111	93	120	119	120	210	252	256	330	204
Australia (b) ..	3,463	3,960	4,655	4,089	3,454	3,897	4,494	4,763	4,856	3,792

RATE OF INFANTILE MORTALITY.(a)

New South Wales ..	62.48	79.33	74.03	62.38	57.68	56.76	66.99	66.01	63.01	50.81
Victoria ..	71.61	78.22	83.82	73.82	58.25	51.56	56.87	62.18	71.13	48.03
Queensland ..	69.69	93.89	70.39	61.81	57.10	51.38	63.01	59.98	50.82	44.96
South Australia ..	54.70	66.19	74.57	73.64	58.23	48.04	62.03	59.77	56.89	36.73
Western Australia ..	68.71	66.33	76.14	80.55	58.27	46.57	56.09	55.17	75.93	52.67
Tasmania ..	82.84	68.89	74.81	75.17	71.94	53.30	63.64	61.89	79.09	49.17
Australia (b) ..	66.06	77.99	76.99	68.62	58.33	53.26	62.96	62.78	63.48	48.50

(a) Number of deaths under one year per 1,000 births registered. (b) Exclusive of Territories.

During recent years it has become increasingly recognized that the future number and health of the people depend largely on pre-natal as well as after care in the case of both mothers and children. Throughout the various States the Governments and private organizations are, therefore, actively interesting themselves in the matter of providing adequate instruction and treatment for mothers before and after confinement, while the health and well-being of mother and child are looked after by the institution of baby health-centres, baby clinics, crèches, visitation by qualified midwifery nurses, careful supervision of milk supply, etc.

2. **Government Activities.**—In all the States Acts have been passed with the object of supervising and ameliorating the conditions of infant life and reducing the rate of mortality. Legislation in the various States has proceeded generally on similar lines. Government Departments have been established to control the boarding-out to suitable persons of the wards of the State, and wherever possible the child is boarded out to its mother or near female relative. Stringent conditions regulate the adoption, nursing and maintenance of children placed in foster-homes by private persons, while special attention is devoted to the welfare of ex-nuptial children. (See also in this connexion Chapter XI.—Public Benevolence.) Under the provisions of the Maternity Allowance Act 1912, a sum of five pounds is payable to the mother in respect of each confinement at which a living or viable child is born. Further particulars regarding Maternity Allowance are given in Chapter VIII.—Finance.

3. Nursing Activities.—(i) *General.* In several of the States, the Government maintains institutions which provide treatment for mothers and children, while, in addition, subsidies are granted to various associations engaged in welfare work.

(ii) *New South Wales.* Baby clinics were established by the Government in 1904. Attached to each clinic is an honorary medical officer and a staff of trained nurses who instruct mothers in matters pertaining to the care of themselves and their children. At the 30th June, 1922, there were 34 clinics in operation, of which 20 were in the metropolitan area and the remainder in important industrial and rural centres. During 1921 the attendances at the clinics numbered 131,845, and the nurses paid 50,946 visits to homes. No charge is made for attention or advice.

The Royal Society for the Welfare of Mothers and Children has two training schools for nurses and two welfare centres in the metropolis. The Day Nursery Association maintains three nurseries where working mothers may leave their children during the day.

The Bush Nursing Associations aim at providing fully-qualified nurses in country districts throughout Australia. Centres may be formed in any district where the residents can enrol sufficient members to guarantee the salary of a nurse. As the greater part of the nurses' work is that of midwifery, the nurses must be registered midwives. At the end of June, 1922, there were 24 bush-nursing centres in New South Wales.

(iii) *Victoria.* The first Baby-Health Centre was opened in 1917. At the latest available date the Victorian Baby-Health Centres' Association had 49 centres in operation, 38 in the metropolitan area, and 11 in country towns. The Association receives subsidies from the State Government and the local municipal councils. During the year ended 30th June, 1922, attendances at the centres numbered 77,545, while 46,249 visits were paid by the nurses to patients in their own homes. The Society for the Health of Women and Children also maintains four centres in the industrial suburbs of the metropolis. There are, in addition, crèches where children may be left while the mothers are at work.

The Bush Nursing Association had on 30th June, 1922, 36 centres in operation in the country districts, and since that date several new centres have been established.

(iv) *Queensland.*—Baby Clinics were established in Brisbane by the Government in 1918, and others have been formed in some of the larger provincial centres. A training school is being organized to train nurses for welfare work. For the year ended 30th June, 1922, attendances at the clinics numbered 38,029, in addition to which the nurses paid 4,404 visits in connexion with the after care of mothers and infants.

There are in the metropolitan area five kindergartens and five crèches where children may be left during the day. The Playgrounds Association aims at providing playgrounds for children in the populous parts of towns and cities.

The Bush Nursing Association has seven nurses stationed in the country districts.

(v) *South Australia.* A School for Mothers is situated in Adelaide, and there are several branches in the suburbs, and one at Port Pirie. These schools receive a Government and municipal grant. During the year ended 30th June, 1922, the nurses paid 1,044 visits to expectant mothers and 16,724 to young babies. In August, 1921, baby clinics were established, to which 20,017 babies were brought for examination, advice and information being given where necessary to the mothers. There is a crèche at South Adelaide for the benefit of the children of women obliged to earn their own living.

The District Trained Nursing Society has over 30 branches, of which about half are in the metropolitan area. The nurses of this society paid 66,111 visits to homes. Nursing homes have been established by the Australian Inland Mission at Beltana and Oodnadatta in the far north of South Australia and at three places in the Northern Territory.

(vi) *Western Australia.* The organizations which aim at improving the conditions of infant life include an ante-natal clinic established by the Government at the King Edward Maternity Hospital, and a day nursery where children may be left and cared for while the mothers are away at work.

The Bush Nursing Trust maintains a rest-house for expectant mothers, and the Australian Inland Mission has nursing homes at Hall's Creek and Port Hedland.

(vii) *Tasmania.* The Children's Welfare Associations in Hobart and Launceston each control two baby clinics. During the year ended 30th June, 1922, the nurses visited 6,570 homes. Attendances at the clinics for the same period numbered 14,610.

The Bush Nursing Association, which is subsidized by the Health Department, the Red Cross Fund, and municipal councils, has stationed nurses in eight country districts.

CHAPTER XIII.

LABOUR, WAGES AND PRICES.

§ 1. Trade Unions.

1. **Registration.**—(i) *Under Trade Union Acts.* The benefits obtained by registering trade unions under the Trade Union Acts in force in the various States are not considered of much value; consequently the statistics of registered trade unions of employees do not accurately represent the position of unionism. Further, the returns for past years are so defective as to be practically valueless, inasmuch as no reliable indication is afforded of the numerical and financial position of the unions. Some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Others have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed registering under the Commonwealth Conciliation and Arbitration Act or a State Arbitration Act. In Queensland, some of the largest labour unions withdrew from registration during 1911, mainly on account of the necessity for closer restriction of their objects as set forth in their rules, consequent on legal decisions affecting trade unions. In Victoria and in South Australia very few of the existing unions are registered under the Trade Union Acts. It will be seen, therefore, that the available information under this heading is too meagre for statistical purposes.

(ii) *Under Industrial Arbitration Acts.*—Information with regard to registrations of trade unions under the various State Industrial Arbitration Acts will be found in previous issues of the Year Book. The latest information available as to registrations is as follows:—New South Wales, 119 industrial unions of employers and 153 industrial unions of employees; Queensland, 76 industrial unions of employees with approximately 92,444 members; South Australia, 16 organizations of employees with 11,800 members; Western Australia, 43 organizations of employers with 900 members, and 125 organizations of employees with 34,084 members. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers; another was registered in 1911. The unions of employees registered were 20 in 1906, with 41,413 members. On the 31st December, 1920, there were on the register 6 organizations of employers, with 6,170 members, and 122 organizations of employees with 549,285 members. In August, 1923, there were on the register 10 organizations of employers with 5,663 persons, firms or corporations affiliated, and 147 organizations of employees with 578,095 members.

2. **Particulars regarding Trade Unions.**—(i) *Types.* The trade unions in Australia are very diverse in character, and range from the small independent association to the large interstate organization, which, in its turn, may be merely a branch of a British or international union. Broadly speaking, there are four distinct classes of labour organizations, viz.:—(i) the *local independent*, (ii) the *State*, (iii) the *interstate*, and (iv) the *Australasian or International*, but a number of variations occur from each of these classes. The leading characteristics of each of these types were briefly outlined in Labour Report No. 2 (pp. 7 to 9) issued by this Bureau.

(ii) *Number and Membership, States, 1922.* As already stated, the figures for trade unions registered under the Acts do not represent the position of unionism in Australia. In 1912 the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics was established, and with the cordial co-operation of the officials of the labour organizations, comprehensive figures relating to the development of organized labour are now available. The following table shows the position at the end of 1922:—

TRADE UNIONS, BRANCHES, AND MEMBERS, 1922.

State or Territory.	Number of Separate Unions.	Number of Branches.	Number of Members.
New South Wales	217	858	284,689
Victoria	169	452	206,281
Queensland	118	346	100,939
South Australia	106	144	55,208
Western Australia	117	189	41,405
Tasmania	83	69	14,346
Northern Territory	3	..	70
Total	813	2,058	702,938
Australia(a)	387(a)	2,484(b)	702,938

(a) Allowing for interstate duplication. (b) Number of distinct organizations and interstate groups of organizations in Australia—not the total number of organizations—which are practically independent and self-governing. (See below).

In the preceding table the number of separate unions in each State refers to the number of unions which are represented in each State, exclusive of branches within a State. That is to say, each union represented in a State is only counted once, regardless of the number of branches in that State. Except in the last line, the number of branches indicates the number of branches of State head offices, which may, of course, themselves be branches of an interstate or larger organization. In taking the total number of separate unions in Australia (see last line but one), it is obvious that, in the case of interstate and similar unions, there will be duplication, since each such union is counted once in each State in which it has any branches. In the figures given in the last line allowance has been made for this duplication. State branches of interstate or federated unions, as well as sub-branches within a State, are included under the heading “Branches” in the third column—last line. It should be observed, however, that the scheme of organization of these interstate or federated unions varies greatly in character, and the number of separate Commonwealth unions does not fairly represent the number of practically independent organizations in Australia. In some of these unions the State organizations are bound together under a system of unification and centralized control, while in others the State units are practically independent and self-governing, the federal bond being loose and existing only for one or two specified purposes. There are therefore 387 distinct organizations and interstate groups of organizations in Australia, having 2,484 State branches and sub-branches, and a total of 702,938 members.

(iii) *Classification in Industrial Groups.* The following table shows the number of unions and members thereof in Australia at the end of the years 1914 to 1922. The number of unions specified refers to the number of different unions represented in each State; that is to say, interstate or federated unions are counted once in each State in which they are represented, but sub-branches within a State are not counted.

TRADE UNIONS.—INDUSTRIAL GROUPS, AUSTRALIA, 1914 TO 1922.

Industrial Groups.	1914.	1915.	1916.	1918.	1919.	1920.	1921.	1922.
NUMBER OF UNIONS.								
I. Wood, Furniture, etc. ..	20	20	20	20	20	19	19	19
II. Engineering, Metal Works, etc. ..	76	77	76	77	77	76	75	69
III. Food, Drink, Tobacco, etc. ..	70	72	69	80	77	71	66	68
IV. Clothing, Hats, Boots, etc. ..	30	31	28	28	27	26	25	25
V. Books, Printing, etc. ..	29	30	29	30	29	26	18	17
VI. Other Manufacturing ..	80	78	78	84	84	84	85	84
VII. Building	67	63	63	58	57	56	57	54
VIII. Mining, Quarrying, etc. ..	27	27	26	26	20	18	19	19
IX. Railway and Tramway Services	32	31	28	40	43	43	49	52
X. Other Land Transport ..	25	24	23	23	23	22	20	20
XI. Shipping, etc. ..	63	66	65	72	71	69	70	74
XII. Pastoral, Agricultural, etc. ..	11	12	10	9	8	9	9	10
XIII. Domestic, Hotels, etc. ..	22	20	22	20	20	23	24	26
XIV. Miscellaneous	160	162	168	200	215	254	260	276
Total	712	713	705	767	771	796	796	813

TRADE UNIONS.—INDUSTRIAL GROUPS, AUSTRALIA, 1914 TO 1922—
continued.

Industrial Groups.	1914.	1915.	1916.	1918.	1919.	1920.	1921.	1922.
NUMBER OF MEMBERS.								
I. Wood, Furniture, etc. ..	19,071	16,172	14,762	18,953	21,156	23,691	25,541	23,582
II. Engineering, Metal Works, etc. ..	42,108	47,104	49,230	47,135	49,043	53,870	57,012	53,637
III. Food, Drink, Tobacco, etc. ..	39,763	38,504	41,515	40,953	46,569	49,447	51,698	54,497
IV. Clothing, Hats, Boots, etc. ..	17,593	21,885	25,962	31,856	38,620	40,325	42,069	44,540
V. Books, Printing, etc. ..	9,821	10,784	11,079	11,972	13,259	15,136	15,059	15,341
VI. Other Manufacturing ..	29,002	30,648	32,119	30,673	34,901	39,710	38,873	37,942
VII. Building ..	36,593	37,739	36,255	35,761	37,301	40,348	42,244	42,177
VIII. Mining, Quarrying, etc. ..	39,733	33,024	33,515	35,519	40,278	41,777	39,967	38,082
IX. Railway and Tramway Services ..	71,260	76,482	75,896	74,813	83,183	89,069	88,731	92,152
X. Other Land Transport ..	17,687	17,208	15,719	14,487	15,903	17,862	16,944	20,376
XI. Shipping, etc. ..	44,536	42,903	45,868	50,433	48,598	41,668	40,840	41,510
XII. Pastoral, Agricultural, etc. ..	44,593	38,334	37,679	44,176	46,794	42,923	47,893	43,538
XIII. Domestic, Hotels, etc. ..	11,135	9,269	9,907	11,169	14,702	19,353	20,442	21,130
XIV. Miscellaneous ..	100,376	107,975	117,050	133,855	137,378	169,271	175,696	174,434
Total	523,271	528,031	546,556	581,755	627,685	684,450	703,009	702,938

Particulars are given in Labour Report No. 13 (p. 12) of the number of male and female members of unions and the percentage of such members on the total number of adult wage earners. Other tables in the same Report show the classification of unions according to the number of members and the number of central labour organizations.

(iv) *Interstate or Federated Unions, 1922.* The following table gives particulars as to the number and membership of interstate or federated unions in 1922 :—

INTERSTATE OR FEDERATED UNIONS.—AUSTRALIA, 1922.

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.	6 States. (a)	
Number of Unions ..	19	13	16	15	42	105
Number of Members ..	25,291	45,202	65,006	137,351	289,251	562,101

(a) Certain unions in this group have, in addition to branches in each of the six States, a branch in the Northern Territory.

It appears, therefore, that 105 out of the 387 separate associations and groups of associations in Australia are organized on an interstate basis. The membership of these 105 unions amounts to 562,101, or no less than 79.9 per cent. of the total membership (702,938) of all unions.

3. **Central Labour Organizations.**—In each of the capital cities, as well as in a number of other industrial centres, delegate organizations, consisting of representatives from a group of trade unions, have been established. Their revenue is raised by means of a per capita tax on the members of each affiliated union. In most of the towns where such central organizations exist, the majority of the local unions are affiliated with the central organization, which is usually known as the Labour or the Trades Hall Council, or the Labour Federation. In Western Australia a unified system of organization extends over the industrial centres throughout the State. In this State there is a provincial branch of the Australian Labour Party, having a central council and executive, and metropolitan and branch district councils, to which the local bodies are affiliated. The central council, on which all district councils are represented, meets periodically. In the other five States, however, the organization is not so close, and although provision usually exists in the rules of the central council at the capital city of each State for the organization of district councils or for the representation on the central council of the local councils in the smaller industrial centres of the State, the councils in each State are, as a matter of fact, independent bodies.

The table below shows the number of metropolitan and district or local labour councils, together with the number of unions and branches of unions affiliated therewith, in each State at the end of the year 1922 :—

CENTRAL LABOUR ORGANIZATIONS.—NUMBER, AND UNIONS AFFILIATED, 1922.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
Number of Councils	3	5	4	3	9	2	1	27
Number of Unions and Branch Unions affiliated ..	97	182	74	79	179	33	3	647

The figures given in the preceding table as to number of unions do not necessarily represent separate unions, since the branches of a large union may be affiliated to the local trades councils in the several towns in which they are represented.

Between the trade union and the central organization of unions may be classed certain State or district councils, organized on trade lines and composed of delegates from separate unions, the interests of the members of which are closely connected by reason of the occupations of their members, such, for example, as delegate councils of bakers, bread carters, and mill employees, or of unions connected directly or indirectly with the iron, steel, or brass trades, or with the building trades.

§ 2. Laws Relating to Conditions of Labour.

1. **General Legislation.**—The statutes in force at the end of 1922 in the several States which more or less directly affect the general conditions of labour are given in the table hereunder :—

LABOUR LAWS.—TABLE OF STATUTES IN FORCE IN AUSTRALIAN STATES, 1922.

New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
1. <i>General</i> — Factories and Shops 1912 Early Closing 1899, 1900, 1906, 1910, 1915, 1919 Saturday Half-Holiday 1910 Eight Hours 1916, 1920, 1922 Sunday Trading (Refreshment Rooms) 1916	Factories and Shops 1915, 1919, 1920 (2), 1922 (2)	Factories and Shops 1900, 1908, 1914, 1916 (2), 1920, 1922	Industrial Code 1920, 1921 Early Closing 1911, 1912	Factories and Shops 1920, 1921	Factories, 1910 1911, 1917 Shops Closing 1911, 1913
2. <i>Prevention of Strikes and Regulation of Rates of Wages</i> — Industrial Arbitration 1912, 1916, 1918 (2), 1919, 1920, 1922	Factories and Shops 1915, 1919, 1920 (2)	Industrial Arbitration 1916	Industrial Code 1920, 1921	Industrial Arbitration 1912, 1920	Wages Boards 1920
3. <i>Mining Industry</i> — Mines Inspection 1901, 1904 Coal Mines Regulation 1912, 1913, 1917, 1922	Mines 1915, 1921 Coal Mines Regulation 1915, 1922	Mining 1898, 1901, 1902, 1912, 1914, 1915, 1920 (2) Mines Regulation 1910, 1912, 1916	Mining 1893, 1895, 1900, 1911, 1918 Mines and Works Inspection 1920	Mining 1904, 1919, 1920, 1921, 1922 Mines Regulation 1906, 1915 Mines and Machinery Inspection 1911 Coal Mines Regulation 1902, 1915 Miner's Phthisis 1922	Mining 1917, 1918, 1920, 1921 Mines and Works Regulation 1915

LABOUR LAWS—TABLE OF STATUTES—*continued.*

New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
4. <i>Security of Wages to Wage Earners—</i> Contractors' Debts 1897	Employers and Employees 1915	Contractors' and Workmen's Liens 1906, 1921 Wages 1918 Wages 1918 ..	Workmen's Liens 1893, 1896 Wages Attach-ment 1898	Workmen's Wages 1898..	..
Attachment of Wages Limita-tion 1900 Truck 1900, 1901, 1918	..	Factories and Shops (as above) Insolvency 1874, 1876	Industrial Code 1920, 1921 Insolvent 1886, 1887, 1896, 1914, 1915, 1918	Truck 1899, 1900, 1904 Bankruptcy 1892, 1898	Wages Attach-ment 1900 ..
Bankruptcy 1898 (preference to wages)	Insolvency 1915				Bankruptcy 1870, 1899
5. <i>Accommodation, Homes, etc.—</i> Shearers' Accommodation 1901	Shearers' Hut Accommoda-tion 1915	Workers' Ac-commodation 1915, 1921	Shearers' Ac-commodation 1905, 1916, 1922	Shearers' Ac-commodation 1912	..
..	Closer Settle-ment (Work-ers' Homes) 1915	Miners' Home-stead Perpet-ual Leases 1913 (2), 1921	..	..	..
Housing 1912 ..	Housing and Reclamation 1920	Workers' Homes 1919, 1922	..	Workers' Homes 1911, 1912, 1914, 1921	Homes 1919, 1920, 1922 Municipal Homes, 1919
6. <i>Inspection of Machinery, etc.—</i> Scaffolding and Lifts 1912	Lifts Regulation 1915	Inspection of Scaffolding 1915	Scaffolding In-spection 1907, 1908 Lifts Regulation 1908	..	..
..	Scaffolding In-spection 1922	..	..	..	..
Boiler Inspection Regulations (under Fac-tories and Shops 1912)	Boilers' Inspec-tion 1915 (2), 1921	Inspection of Machinery 1915	Steam Boilers and Engine Drivers 1911, 1913	Inspection of Machinery 1922	Inspection of Machinery 1902, 1909, 1913
7. <i>Trade Unions—</i> Trade Unions 1881 Trade Unions Re-registration 1920	Trade Unions 1915	Trade Unions 1915, 1922	Trade Unions 1876	Trade Unions 1902	Trade Unions 1889
8. <i>Relations of Masters and Servants—</i> Masters and Ser-vants 1902	Employers and Employees 1915	Apprentices 1828, 1844	Masters and Ser-vants 1878	Masters and Ser-vants 1892	Master and Ser-vant 1856, 1882, 1884, 1887
Apprentices 1901, 1915	Master and Ap-prentice 1915	Wages 1918 ..	..	Masters and Ap-prentices 1873	..
..	Servants' Regis-try Offices 1915	Labour Ex-changes 1915	Employees' Registry Offices 1915	Employment Brokers 1909, 1912, 1918	..
9. <i>Liability in case of Accidents—</i> ..	Employers and Employees 1915	..	Employers' Lia-bility 1884, 1889	Employers' Lia-bility 1894	Employers' Lia-bility 1895, 1898, 1903
Workmen's Com-pensation 1916, 1920 (3), 1922	Workers' Com-pensation 1915, 1922	Workers' Com-pensation 1916 (2), 1918, 1921	Workmen's Compensation 1911, 1918, 1919, 1920, 1922	Workers' Com-pensation 1912, 1920, 1923	Workers' Com-pensation 1918, 1920, 1921

2. Factory Legislation.—(i) *Conspectus*. The accompanying conspectus contains the

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
	A.—		
1. <i>Acts in Force</i>	Factories and Shops Act 1912	Factories and Shops Acts 1915, 1919, 1920 (2), 1922	Factories and Shops Acts 1900, 1908, 1914, 1916 (2), 1920
2. <i>Application of Acts</i>	<p>(a) The Act applies only to such localities as are declared or deemed to be declared by the Governor to be a district or districts for the purposes of the Act</p> <p>(b) The Governor may exempt, either wholly or in part, any factory or class of factories from the operation of the Act</p>	<p>(a) Except where otherwise expressly provided, the provisions of the Act apply to factories wherever situate in Victoria</p> <p>(b) Nothing in the Act applies to persons engaged in dairying, agriculture, horticulture, viticulture, or pastoral pursuits in any shire, town, or borough outside the metropolitan district</p>	<p>(a) The Governor may constitute the area comprised within the district of a Local Authority or within the districts of two or more Local Authorities or any subdivisions thereof a District for the purposes of the Act, and thereupon the provisions of the Act are in force in such District</p> <p>(b) The Governor may exempt, either wholly or in part, any factory or class of factories from the operation of the Act</p>
3. <i>What the term "Factory" includes</i>	<p>(a) Any office, building, or place in which four or more persons are engaged directly or indirectly in working at any handicraft, or in preparing or manufacturing articles for trade or sale; and laundries and dye-works in which four or more persons are engaged</p> <p>(b) Any office, building, or place in which one or more Chinese are so engaged</p> <p>(c) Any place or building where steam or other mechanical power or appliance is used in manufacturing goods or packing them for transit, or in generating electricity, water power, or any other power</p> <p>(d) Any bakehouse</p>	<p>(a) Any office, building, or place in which—</p> <p>(i) four or more persons are employed directly or indirectly in working in any handicraft, or in preparing or manufacturing articles for trade or sale</p> <p>(ii) one or more Chinese are so employed</p> <p>(iii) one or more persons are employed and in which steam, water, gas, oil, or electric power is so used</p> <p>(iv) one or more persons are employed and furniture is prepared or manufactured</p> <p>(v) one or more persons are employed and any bread or pastry is made or baked for sale</p> <p>(vi) electricity is generated for the supply of heat, light, or power</p> <p>(vii) coal gas is made</p> <p>(b) Any clay-pit or quarry worked in connexion with and occupied by the occupier of any pottery or brick-yard</p>	<p>(a) Any building, premises, or place in or in connexion with which two or more persons, including the occupier, are engaged in working directly or indirectly at any handicraft, or in preparing, working at, dealing with, or manufacturing articles for or in connexion with any trade or for sale, including every bakehouse and laundry</p> <p>(b) Any building, premises, or place in which a person or persons of the Chinese or other Asiatic race are so engaged</p> <p>(c) Any building, premises, or place where steam or other mechanical power or appliance is used in dealing with or manufacturing goods or packing them for transit, including a butter factory, wool-scouring, sugar-mill, and boiling-down works</p>
4. <i>What the term "Factory" does not include</i>	<p>(a) Any building or place in which the persons engaged in working are all members of one family and in which steam or other mechanical power is not used</p> <p>(b) Any building used for the manufacture of dairy produce</p> <p>(c) Any wool shed used for shearing sheep</p> <p>(d) Any building used for dumping wool</p> <p>(e) Any ship</p>		<p>(a) Any prison or industrial or reformatory school</p> <p>(b) Any ship</p> <p>(c) Any mine, colliery, or place in which machinery is used about a mine</p> <p>(d) Any building, premises, or place—</p> <p>(i) used for the manufacture of dairy produce</p> <p>(ii) used exclusively for pastoral or agricultural purposes and situated upon a run or farm</p> <p>(iii) in which persons are engaged at home and no steam or other mechanical power is used and where the only persons engaged are members of the same family related by blood or marriage and dwelling there</p>

principal provisions of the Factories and Shops Acts in force in Australia :—

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA.

South Australia.	Western Australia.	Tasmania.
FACTORIES.		
Industrial Code 1920, 1921	Factories and Shops Act 1920, 1922	Factories Act 1910, 1911, 1917
<p>(a) The provisions of the Act apply to the metropolitan area and to any part of the State to which it may be extended by proclamation</p> <p>(b) The application of the Act does not, as regards agricultural, horticultural, viticultural, or pastoral pursuits, extend to any employer or employee engaged therein or to any factory connected therewith</p>	<p>The Act applies to the whole State, but the Governor may by proclamation exempt any portion of the State from the operation thereof or of any part thereof</p>	<p>The Act applies to every factory, including those belonging to the Crown, but the Governor may, with the consent of both Houses of Parliament, exempt, either wholly or in part, any factory or class of factories in the State or in any part of the State from the operations of the Act or any provisions thereof</p>
<p>(a) Any premises or place within which or the precincts whereof the occupier employs any one person at manual labour which is exercised by way of trade or for purposes of gain in—</p> <p>(i) any handicraft ; or</p> <p>(ii) the making of any article ; or</p> <p>(iii) the altering, repairing, ornamenting, or finishing of any article ; or</p> <p>(iv) the adapting of any article for sale</p> <p>to which premises the occupier has the right of access or control</p> <p>(b) Any clay-pit or quarry similarly worked in connexion with any pottery or brick-yard occupied by the same employer</p> <p>(c) Any premises or place where electricity is generated or coal gas made and within which the employer employs any person at manual labour for trade or gain</p>	<p>(a) Any building, premises, or place in which—</p> <p>(i) four or more persons are engaged, directly or indirectly, in any handicraft, or in preparing or manufacturing goods for trade or sale</p> <p>(ii) a person or persons of the Chinese or other Asiatic race is so engaged</p> <p>(iii) steam or other mechanical power or appliance exceeding 1 horse-power is used for preparing, working at or manufacturing goods or packing them for transit</p> <p>(iv) articles intended for human consumption are manufactured or prepared for sale</p> <p>(v) electrical energy is generated or coal gas produced</p> <p>(b) Any bakehouse</p> <p>(c) Any laundry</p> <p>(d) Any clay-pit or quarry worked in connexion with and occupied by the occupier of any pottery or brick-yard</p>	<p>(a) Any building, structure, premises, or place in which—</p> <p>(i) four or more persons, including the occupier, are employed directly or indirectly in any handicraft or in preparing or manufacturing articles for trade or sale</p> <p>(ii) any Asiatic is so employed</p> <p>(iii) steam, water, oil, gas, or electric power exceeding 1 horse-power is used in preparing or manufacturing articles for trade or sale or packing them for transit</p> <p>(iv) electrical energy is generated or coal gas produced</p> <p>(b) Any bakehouse</p> <p>(c) Any clay-pit or quarry worked or used in connexion with and occupied by the occupier of any pottery or brick-yard</p>
<p>(a) Any premises of the Municipal Tramway Trust where electricity is generated</p> <p>(b) Any medical dispensary</p> <p>(c) Any dentist's laboratory</p> <p>(d) Any chemist's laboratory</p>	<p>(a) Any building in course of erection or shed for workmen engaged in the erection of such building</p> <p>(b) Any prison or any industrial or reformatory school</p> <p>(c) Any ship</p> <p>(d) Any mine or colliery or place in which machinery is used about a mine or colliery</p> <p>(e) Any building, premises, or place</p> <p>(i) in which the occupier manufactures or prepares dairy produce from the products of his own herd</p> <p>(ii) used exclusively for pastoral, agricultural, orchard, or garden purposes</p> <p>(iii) in which any person not being of the Chinese or other Asiatic race is engaged in any trade operation in private premises, and in which no mechanical power in excess of 1 horse-power is used, and the only persons engaged do not exceed four and are members of the same family and dwelling there</p>	<p>(a) Any prison, reformatory, industrial school, or home for erring women</p> <p>(b) Any institution conducted exclusively for charitable purposes</p> <p>(c) Any building, premises, or place used exclusively for the manufacture of dairy produce</p> <p>(d) Any ship</p> <p>(e) Any building, premises, or place used exclusively for pastoral, agricultural, or horticultural purposes and situate outside of cities</p> <p>(f) Any mine, colliery, or place in which machinery is used about a mine, or any smelting works, or any works within the meaning of any Acts relating to mines and mining</p> <p>(g) Any building in course of erection or any temporary workshop or a shed for workmen engaged in the erection of such building</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACTORIES—			
5. <i>Registration of Factories</i>	Every factory about to be occupied or, after a period of disuse, about to be again used must be registered not less than 7 days before being used	(a) Every factory must be registered within 14 days of its becoming a factory (b) Every office, building, or place about to become a factory must be certified as suitable by the council of the district or chief inspector (c) The registration must be renewed annually on or before the 31st January	(a) Every factory about to be used, any building, premises, or place from which materials are issued for preparation outside must be registered not less than 7 days before it is so used (b) The registration fee must be paid annually on or before the 31st January
6. <i>Appointment of Inspectors</i>	The Governor may appoint as many inspectors of factories and shops as may appear necessary for carrying into effect the provisions of the Act	(a) Subject to the provisions of the Public Service Act, the Governor may appoint a chief inspector and so many inspectors of factories and shops as may appear necessary (b) Any member of the police force may be appointed by the Minister for Labour to act as inspector of factories in his district	The Governor may appoint a chief inspector and so many inspectors and officers as may be necessary for carrying into effect the provisions of the Act
7. <i>Powers of Inspectors</i>	Every inspector has power— (a) to enter, inspect, and examine, at all reasonable hours by day or night, any factory when he believes that any person is employed therein, and to enter by day any place which he believes is used as a factory (b) to take with him an officer of health or inspector of nuisances or an interpreter; or, if he apprehends any serious obstruction in the execution of his duty, a constable (c) to require the production of the certificate of registration or any document which is required to be kept, and to inspect, examine, and copy the same (d) to make such examination and inquiry as may be necessary to ascertain whether the provisions of the Act and of any Act relating to public health are complied with (e) to examine any person whom he finds in a factory or whom he believes to have been employed in a factory within the preceding two months (f) to conduct prosecutions under the Act (g) to exercise all other powers necessary for carrying out the provisions of the Act or of any Act relating to public health as may be determined from time to time	Every inspector has power— (a) to enter, inspect, and examine, at all reasonable times by day or night, a factory when he believes that any person is employed therein, or any place when he believes that any person is employed therein at work for which a wages board has fixed prices or rates, and to enter by day any place which he believes to be a factory (b) to take with him an interpreter and, if he apprehends any serious obstruction, a member of the police force (c) to require the production of all pay-sheets or books wherein an account is kept of the wages paid where the determination of a wages board applies and take copies of the same (d) to require the production of the certificate of registration and any documents kept in pursuance of the Act (e) to ascertain whether the enactments relating to public health and of the Act are complied with (f) to enter any school in which he believes that persons employed in a factory are being educated (g) to examine any person whom he finds in a factory or in such a school, or whom he believes to have been within the preceding two months employed in a factory or at work for which a wages board has fixed prices (h) to exercise such other powers as may be necessary for carrying the Act into effect	An inspector may— (a) enter, inspect, and examine, at all reasonable hours by day or night, any factory and any place which he believes to be used as a factory (b) take with him a legally-qualified medical practitioner, and, if he apprehends obstruction, a member of the police force (c) make examination and inquiry to ascertain whether the provisions of the Act or Regulations or of any Health Act are complied with (d) examine any person whom he finds in a factory, or who has during the preceding two months been an employee of the occupier thereof (e) require the production of any certificate of registration and any document which is required by the Act or Regulations to be kept or exhibited, and inspect, examine, and copy the same (f) exercise all the powers necessary for carrying into effect the provisions of the Act and Regulations and of any Act relating to public health

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.

Western Australia.

Tasmania.

continued.

(a) Every person in occupation of a factory must register such factory within 21 days of going into such occupation
 (b) The registration fee must be paid annually on or before the 31st January
 (c) The registration must be renewed every five years

(a) Every building, premises, or place used as a factory must be registered
 (b) The registration only operates until the 31st December every year, and after that date a factory must be re-registered
 (c) No person of a Chinese or other Asiatic race may be registered unless he carried on the business before the 1st November, 1903

(a) Every factory must be registered within 21 days of its being occupied as such
 (b) The registration fee must be paid annually before the 31st January, otherwise the factory is deemed to be not duly registered

The Governor may appoint a chief inspector and so many inspectors as may appear necessary. Every inspector carrying out the duties of inspecting the fencing of machinery and investigating accidents must be a qualified mechanic

(a) The Governor shall appoint some fit and proper person to be chief inspector of factories
 (b) The Minister may appoint fit persons of either sex to be inspectors of factories

The Governor may appoint a chief inspector of factories and such inspectors and other officers as are necessary for the administration of the Act

An inspector may—

(a) enter, inspect, and examine—
 (i) any factory, at any time, when he believes that any person is employed therein; and
 (ii) at all reasonable times any place which he believes to be a factory
 (b) take with him a constable when he has cause to apprehend any serious obstruction
 (c) inspect and examine machinery in any factory
 (d) make examination and inquiry to ascertain if the provisions of the Act and all health laws are complied with
 (e) report to the Board of Health for the district any breaches of the health laws
 (f) question every person whom he finds in a factory, or whom he believes to be or have been within the preceding two months employed in a factory
 (g) require the production of any document which is required by the Act to be kept or exhibited, and inspect, examine, and copy the same
 (h) exercise such powers and authorities as may be prescribed

Every inspector may—

(a) enter, inspect, and examine a factory at all reasonable hours by day and night when he believes that any person is at the time employed therein, and enter by day any place which he believes to be a factory
 (b) take with him a member of the police force to assist him in the execution of his duty
 (c) make examination and inquiry to ascertain whether the provisions of the Act and Regulations, and of all laws, regulations, and by-laws relating to public health and of all industrial awards and agreements are complied with
 (d) require and oblige any person whom he finds in a factory or whom he believes to have been in the preceding two months employed in a factory to answer questions
 (e) require the production of any certificate of registration or of any document which is required by the Act or any other Act to be kept or exhibited, and inspect, examine, and copy the same
 (f) exercise other powers necessary to carry the Act into effect
 (g) take with him an interpreter
 (h) require the production of all pay-sheets or pay-books, and take copies of or extracts from the same

Every inspector may—

(a) enter, inspect, and examine—
 (i) at any time any factory when he believes that any person is employed therein; and
 (ii) at all reasonable times any place which he believes to be a factory
 (b) take with him a constable if he apprehends any serious obstruction
 (c) make examination and inquiry to ascertain whether the provisions of the Act and of all health laws are complied with
 (d) report any breaches of the health laws
 (e) question every person whom he finds in a factory, or whom he believes to have been within the preceding two months employed in a factory
 (f) require the production of any document which is required by the Act to be kept or exhibited, and inspect, examine, and copy the same
 (g) exercise such powers and authorities as may be prescribed
 (h) take with him an interpreter

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACORIES—			
8. <i>Notices to be posted up in or about a Factory</i>	A copy of the Act and Regulations must be posted up in a conspicuous place at or near the entrance, also a notice containing— (a) the name and address of the inspector for the district (b) the usual working hours and time allowed for meals for— (i) adult males (ii) boys under 16 years of age and all females	Notices in legible Roman characters must be posted up— (a) in some conspicuous place near the entrance containing— (i) the name and address of the inspector and of the certifying medical practitioner for the district (ii) the holidays and working hours (iii) prescribed portions of the Act and Regulations (b) near the outside of the principal outer door—containing the name of the occupier (c) in an approved place a record of all fines levied	A notice must be posted up at or near the entrance showing— (a) the name and address of the inspector (b) the ordinary working hours and the time allowed for meals for— (i) boys under 16 years (ii) females (iii) all other employees (c) the maximum number of persons who may be employed in each room
9. <i>Remedying Defects, Nuisances, etc.</i>	(a) If, in the opinion of an inspector a place is unfit to be used as a factory, he must request the occupier to comply with the requirements specified by him to make such place fit for occupation (b) The occupier may appeal to the Minister, whose decision is final (c) If an inspector reports that no requirements will render a place fit for use as a factory, the Minister may make an order forbidding the use of such place as a factory	(a) Where a factory is dilapidated, unsafe, unfit for use, injurious to health, or insufficiently provided with sanitary arrangements, appliances for the extinction of fire, or means of egress, the chief inspector must notify the occupier and the municipal council, and, unless he hears within two months from the council that the defects are remedied, the occupier must be summoned to show cause why the registration should not be cancelled (b) Any sanitary defects in a factory must be reported by an inspector to the municipal council, which must take action to enforce the provisions of the Health Act	(a) An inspector may notify an occupier to provide additional sanitary conveniences, where the existing number is insufficient (b) If in any building, yard, or place adjoining a factory there exists a nuisance or other sanitary defect likely to injuriously affect the proper sanitation thereof or the health of the employees, an inspector or health officer may require the owner or occupier of such building, etc., to abate such nuisance or amend such defect within the time named in the requisition
10. <i>Cleanliness of Factories</i>	(a) Every factory must be kept in a cleanly state and free from effluvia arising from any drain, closet, urinal, or other nuisance (b) Floors and windows must, when ordered by an inspector, be washed with hot water and soap every four weeks (c) Seats and floors of closets, lavatories, and dressing rooms must be scrubbed every week (d) Urinals, sinks, and wash basins must be cleansed every day	(a) Every factory must be kept in a cleanly state and free from any effluvia arising from any drain, privy, urinal, or nuisance (b) Floors and windows must, when required by the chief inspector, be washed with hot water and soap (c) Seats and floors of privies must be scrubbed every week (d) Urinals must be flushed with water every day	(a) Everything and every place must be kept in a cleanly state, free from any smell or nuisance arising from any drain, lavatory, privy or other convenience, and free from any accumulation or deposit which is a nuisance (b) Floors and windows must be washed with hot water and soap once a month, and when required by an inspector (c) Floors and seats of closets and floors of urinals must be scrubbed once a week (d) Urinals must be flushed with water every day
11. <i>Painting or Limewashing</i>	All inside walls, ceilings, passages and staircases must be either— (a) varnished or painted with oil every seven years, and washed with hot water and soap every 14 months; or (b) limewashed, or washed with some approved liquid every 14 months (bakehouses in municipalities every 6 months); or (c) if papered, be repapered at such times as an inspector may direct	All inside walls, ceilings, passages and staircases must be either— (a) painted with oil or varnished every seven years and washed with hot water and soap every 14 months (bakehouses every 6 months); or (b) limewashed or washed with some other approved material every 14 months (bakehouses every 6 months)	All inside walls, ceilings, passages and staircases must be either— (a) varnished or painted with oil, if required by an inspector, every five years, and washed with hot water and soap every 12 months; or (b) limewashed or washed with some approved liquid every 12 months (bakehouses every 6 months); or (c) if papered, repapered at such times as an inspector may direct An occupier may appeal to the nearest industrial or police magistrate

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<i>continued.</i>		
<p>Notices in legible characters must be posted up—</p> <p>(a) in some conspicuous place in the factory containing—</p> <p>(i) the name and address of the inspector for the district</p> <p>(ii) the holidays and working hours</p> <p>(iii) the times for starting and ceasing work and for meals</p> <p>(iv) copies of prescribed parts of the Act and Regulations</p> <p>(v) the name and address of the certifying medical practitioner</p> <p>(b) in some approved place, containing the name of the occupier</p> <p>(c) in some approved place, containing details of all fines levied</p>	<p>A notice must be posted in a conspicuous place containing—</p> <p>(a) name of occupier</p> <p>(b) situation of factory</p> <p>(c) nature of work carried on</p> <p>(d) name and address of inspector</p> <p>(e) ordinary working hours for—</p> <p>(i) boys under 16 years and females</p> <p>(ii) males over 16 years</p> <p>(f) time allowed for meals</p> <p>(g) day for half-holiday</p> <p>(h) holidays allowed during year</p> <p>(i) maximum number of persons that may be employed in a room</p>	<p>Notices in legible characters must be posted up—</p> <p>(a) in a conspicuous place containing—</p> <p>(i) the name and address of the inspector</p> <p>(ii) number of persons who may be employed in each room</p> <p>(iii) dimensions of each room</p> <p>(iv) working hours, time for meals, and holidays for—</p> <p>(i) males over 16 years of age</p> <p>(ii) males under 16 and females</p> <p>(b) in an approved place, containing the name of the occupier</p>
<p>(a) Written notice must be given by the chief inspector to the occupier of a factory which is (i) dilapidated or (ii) unsafe or (iii) unfit for use, or (iv) injurious to health or (v) insufficiently provided with urinals or privies, appliances for extinguishing fire, sufficient means of egress or natural light, where reasonably practicable</p> <p>(b) Unless the improvements are completed within the period stated in the notice, the occupier may be summoned to show cause why the registration of his factory should not be cancelled</p>	<p>(a) If an inspector is of opinion that a factory, the registration of which is applied for, is defective in any material respect, he must inform the applicant that such factory will not be registered until the defects are remedied. An appeal to the nearest Local Court is allowed</p> <p>(b) If in any building, yard, or place adjoining a factory there exists any nuisance or sanitary defect likely to injuriously affect the sanitation of the factory or the health of the employees, an inspector may require the owner or occupier of such building to abate such nuisance or remedy such defect</p>	<p>Same as South Australia</p>
<p>The occupier of a factory must keep the same clean and free from effluvia arising from any drain, privy, urinal, or nuisance</p>		<p>(a) A factory must be kept clean and free from effluvia arising from any drain, privy, urinal, or nuisance</p> <p>(b) Floors, internal wood work and windows must be kept clean, and, when so ordered by an inspector, washed with water and soap</p> <p>(c) Seats and floors of privies must be scrubbed every week</p> <p>(d) Urinals must be thoroughly cleansed with water every day</p>
<p>(a) The chief inspector may require the internal walls and ceilings of a factory to be lime washed or washed with some approved liquid, if they have not been painted or varnished within the preceding 7 years: if so varnished or painted they must be washed with hot water and soap every 2 years</p> <p>(b) An appeal to the Minister is allowed</p> <p>(c) In bakehouses painting or varnishing must be renewed every 7 years and washed every 12 months, or limewashing must be carried out every 6 months</p>		<p>(a) The chief inspector may require the internal walls and ceilings to be washed unless they have been painted or varnished within 7 years, and such as are so painted or varnished to be washed every 14 months</p> <p>(b) An appeal to the Minister is allowed</p> <p>(c) The internal walls and ceilings of bakehouses must be painted, varnished, or washed, and where paint or varnish is used, the same must be renewed every 7 years and washed every 12 months</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACTORIES—			
12. <i>Factories exempted from Painting or Lime-washing</i>	Blacksmiths', agricultural implement makers', and wheelwrights' shops, foundries, flour-mills, saw-mills, flax-mills, freezing rooms, bone-mills, seed-cleaning mills, tanneries, rope walks, soap and candle works, smelting works, brick and tile works, potteries, hay and corn and chaff-cutting, corn-crushing, wool-washing, and boiler-making establishments, malt-houses, breweries, cheese and sugar refining factories, sugar-mills and shearing sheds, and any factories exempted by the Minister	Blacksmiths', agricultural implement makers', and wheelwrights' shops, foundries, flour-mills, saw-mills, bone-mills, tanneries, rope walks, smelting works, hay and corn, chaff-cutting, corn-crushing, wool-washing, and boiler-making establishments, and any factories exempted by the Minister on the recommendation of the Board of Public Health	A special exemption may be granted by the Minister when it appears that any of the provisions are not required or are by reason of special circumstances inapplicable
13. <i>Air Space and Ventilation</i>	Every factory and every room therein— (a) must contain not less than 400 cub. ft. of space for each person, in the calculation of which the maximum height taken is 14 ft. (b) must, when required by an inspector, be provided with openings for the inlet and outlet of air, each not less than 12 sq. in. for each person employed	(a) To a height of 13 feet, the free air space must amount to at least 400 cub. ft. per person employed (b) Where there is no mechanical ventilation, each workroom must be provided with inlet and outlet openings, each not less than 12 sq. in. for each person employed in such workroom	(a) Every factory must contain not less than 400 cub. ft. of space (maximum height taken 13 ft.) nor less than 25 sup. ft. of floor area for each person (b) Every factory must, when required by an inspector, be provided with inlet and outlet openings, each not less than 12 sq. in. for each person
14. <i>Sanitary Arrangements</i>	(a) <i>Privies</i> .—One for every 15 persons of each sex within the City of Sydney, and one for every 20 elsewhere (b) <i>Urinals</i> .—When required by an inspector, in such proportion as he may specify	(a) <i>Privies</i> .—One for every 20 persons of each sex or fraction thereof, but number for over 20 persons reduced when there is sewerage connexion (b) <i>Urinals</i> .—One to every 45, and smaller proportion where over 45	(a) <i>Privies</i> .—One to every 15 females or 20 males, separated (b) <i>Urinals</i> .—Where 2 or more males or 12 or more females are engaged, one for every 40 persons
15. <i>Lavatory Accommodation</i>	In every factory, lavatory or wash-basins must be provided in the proportion of one basin to every 20 persons of each sex, and where the total number of persons of either sex exceeds 100, one to every 25	Lavatories must be provided for females in the proportion of one basin for every 20 females. When considered necessary, they must also be provided for males, in the same proportion	Proper lavatory accommodation must be provided, and the basins must be not fewer in number than one to every 20 employees
16. <i>Dressing Rooms</i>	Where a change of dress of any females is necessary, the occupier must, at the request of the Minister, provide a dressing-room with a floor area of not less than 64 sq. ft.	If any manufacture necessitates a change of dress by females, a dressing-room for their use must be provided	The chief inspector may direct an occupier to provide suitable rooms or places in which employees may change their apparel
17. <i>Sitting Accommodation</i>	Sitting accommodation must be provided for all females in the proportion of one seat to every three females employed		Sitting accommodation must be provided for all female employees in the proportion of one seat to every three females
18. <i>Provision for taking Meals</i>	The Minister may prohibit the taking of meals in any room while work is being carried on therein, and may require that a suitable eating-room be provided	(a) No person may take meals in any room in which any manufacturing process or handicraft is being carried on unless the factory is of open construction and exempted by the chief inspector (b) A meal room must be provided where the trade is declared by the Governor to be noxious	(a) Wherever practicable, provision must be made for allowing employees separate and suitable places for partaking of refreshments (b) The chief inspector may prohibit the taking of meals in any room while work is actually being carried on therein and may direct the occupier to provide a meal-room

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<i>continued.</i>		
Blacksmiths', agricultural implement makers', and wheelwrights' shops, foundries, saw-mills, bone-mills, tanneries, rope walks, smelting works, chaff-cutting, corn-crushing, wool-washing, or boiler-making establishments	..	Blacksmiths', agricultural implement makers' and wheelwrights' shops, foundries, saw-mills, rope walks, smelting works, chaff-cutting, corn-crushing, wool-washing, and boiler-making establishments
Every factory— (a) must contain at least 400 cub. ft. of clear air space (maximum height taken 14 ft.) for each person; and (b) must be provided with inlet and outlet openings, each not less than 12 sq. in. for each person	(a) Every factory must have such reserved space as determined by the chief inspector, but not less than 350 cub. ft. for each person (maximum height taken, 14 ft.) (b) Every factory must be provided, when required by an inspector, with inlet and outlet openings, each not less than 12 sq. in. for each person employed	Same as South Australia
(a) <i>Privies</i> .—One for every 20 or fraction of 20 persons employed of each sex (b) <i>Urinals</i> .—As prescribed	(a) <i>Privies</i> .—(i) If connected with sewerage, one for every 20 males or 25 females; (ii) if otherwise, one for every 10 males or 15 females, where the number employed does not exceed 100 (b) <i>Urinals</i> .—Where more than 6 males are employed, as prescribed by an inspector	(a) <i>Privies</i> .—One for every 25 persons of each sex or fractional part up to 100 persons, then one for every additional 40 or fractional part (b) <i>Urinals</i> .—One for every 20 males
..	In every factory there must be not less than one wash-basin for every 20 persons employed	In every factory where females are employed, there must be provided not less than one lavatory basin for every 20 females employed
..	Where a change of dress on the part of women is necessary or desirable, the occupier must, at the request of the chief inspector, provide a suitable furnished dressing-room for them	In a factory in which any manufacture is carried on necessitating a change of dress by females, a dressing-room must be provided for them
..	Same as Queensland	..
(a) No person may take a meal in a room— (i) in which any manufacturing process or handicraft is then being carried on; or (ii) in which persons employed are then engaged in their employment (b) Where any employment is declared by the Governor to be noxious, a meal-room must be provided	(a) No person may take a meal in any room in which work is being or within the previous two hours has been carried on (b) When the number of women and boys employed exceeds six, a proper meal-room must be provided, unless an inspector authorizes a place of shelter	(a) No person may take a meal in a room— (i) in which any manufacturing process or handicraft is then being carried on; or (ii) in which persons employed are then engaged in their employment unless exempted by the chief inspector (b) Where a noxious or offensive trade is carried on, a meal-room must be provided

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACTORIES—			
19. <i>Intervals for Meals</i>	No male under 18 and no female may be employed continuously for more than 5 hours without an interval of at least half-an-hour for a meal	No male under 18 and no female may, except on half-holidays, be employed continuously for more than 5 hours without an interval of at least half-an-hour for a meal	No male under 16 and no female may be employed continuously for more than 5 hours without an interval of at least half-an-hour for a meal
20. <i>Prevention of Dust, etc.</i>	Where dust is generated and inhaled to an injurious extent, or where atmospheric humidity is artificially produced whereby the health of the employees is injuriously affected, an inspector may require that a fan or other means of prevention be provided	Where dust is generated and inhaled to an injurious extent, an inspector may direct that a fan or other mechanical means for preventing such inhalation be provided within a reasonable time	Where danger to the health of any employee is likely to arise from the process carried on or from insufficient air or from other cause, an inspector may order the occupier to provide a fan or other efficient appliances, but the matter may be referred to the nearest industrial or police magistrate for decision
21. <i>Protection from Fire</i>	(a) Where ten or more persons are employed, main inside and outside doors must open outwards, and all doors must be kept unlocked during working hours (b) When required by an inspector, a 3-in. hydrant must be provided, with hose and buckets, or chemical fire extinguishers (c) Where there is more than one story, external stairs or ladders must be provided	(a) All doors, passages, and staircases must be kept clear and free from obstruction (b) A primary and alternative escape must be provided for every floor above the ground floor, except in the case of a wooden building in which not more than twenty persons are employed above the ground floor, or a brick building of not more than two floors above the ground floor where not more than 150 persons are similarly employed (c) 1½-in. pipes with cocks and hose or fire buckets or extinguishers must be provided	(a) Every factory two or more stories in height must be provided with reasonable means of escape (b) Where ten or more persons are employed, the main inside and outside doors must open outwards (c) No doors or passages may be locked, bolted, or barred during working hours (d) All proper and necessary precautions and means for preventing and extinguishing fires must be provided, and such fire escapes as an inspector may direct
22. <i>Safeguarding Machinery, etc.</i>	(a) The traversing carriage of any self-acting machine must not run out within 18 inches from any fixed structure, if any person is likely to pass within such space (b) All dangerous parts of machinery must be fenced in (c) An inspector may notify an occupier to fence dangerous machinery, but the matter may be referred to arbitration (d) The Minister may prohibit the use of dangerous machinery or mill-gearing (e) Openings of hoistways, elevators, or lifts and well-holes must be protected with safeguards	(a) Guards must be provided for— (i) all dangerous parts of the machinery (ii) all dangerous appliances (iii) all dangerous parts of the factory (iv) chaff-cutting machines wherever situated (b) The Minister may direct— (i) the occupier to take such steps as he deems necessary to prevent the occurrence of accidents (ii) that any specified machine or appliance must not be used in or in connexion with any specified factory	
23. <i>Records of Employees</i>	(a) A record must be kept of the names of all employees, together with the ages of all employees under 21 years of age, and such record or summary thereof, as the Minister may determine, must be forwarded to an inspector at such times as may be directed by him (b) The occupier must, if so required by the Minister, furnish to him a scale of the wages paid to his employees, and the rates for piece-work to the persons working in and in connexion with the factory	(a) A record must be made and forwarded to the chief inspector within seven days of the 1st January showing the number of persons employed during the first week in December and giving in detail— (i) name of each employee (ii) description of work done by each (iii) hours worked during the week (iv) amount of week's earnings on wages or piece-work for males and females over and under 21 years of age separately	(a) Separate records must be kept for male and female employees showing for each— (i) name (ii) date of engagement (iii) date of leaving employment (iv) age, if under 21 years (v) kind of work done (vi) ordinary working hours (vii) wages, overtime rates, and average weekly earnings of time and piece workers separately (b) Records must be transmitted to an inspector on demand, and a copy sent annually to an inspector before the 7th April

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<p><i>continued.</i></p> <p>No male under 16 and no female may be employed continuously for more than 5 hours without an interval of at least half-an-hour for a meal</p> <p>The chief inspector may order that a fan or other mechanical means for preventing the inhalation of dust be provided, when any process is carried on by which dust is inhaled by the workers and such inhalation can to a great extent be prevented</p> <p>(a) All doors, passages, and staircases must be kept free from obstruction (b) Fire-buckets or extinguishers must be provided (c) On every floor above the first a water pipe of not less than 1½ inches in diameter must be kept with taps and hose</p> <p>(a) The traversing carriage of any self-acting machine must not run out within 18 inches from any fixed structure if any person is likely to pass within such space (b) All dangerous parts of machinery must be fenced in (c) An inspector may require an occupier to safeguard any vat, structure, stairway, or place, but the matter may be referred to arbitration (d) Openings of hoistways, lifts, well-holes, or stairways must be safeguarded (e) Machinery which is dangerous to life or limb or which is prohibited by the Minister must not be used (f) No dangerous lift may be used</p> <p>(a) Record must be kept showing— (i) name of each employee (ii) age of each employee under 21 years of age (iii) work of each employee (iv) number of hours worked by each employee (v) wages rate per week of each employee (vi) piece-work average earnings of each employee (vii) date of discharge (if any) (b) Record must be produced when demanded by an inspector, and sent to the chief inspector during the first week of December</p>	<p>Every worker (except in a continuous process plant) is entitled to three-quarters of an hour for a meal between noon and 3 p.m. and 5 p.m. and 8 p.m., and no worker may work for more than 5 hours (woman or child 4½ hours) without such meal-time</p> <p>An inspector may require the occupier to supply fans or other efficient appliances to carry off and render harmless all gases, vapours, dust, and impurities generated which are injurious to health</p> <p>In every factory in which more than fifteen persons are employed— (a) efficient fire-escapes must be provided for every work-room above the ground floor (b) every door, when an inspector so requires, must open outwards (c) all doors, passages, and staircases must be kept clear and unfastened during working hours (d) reasonably efficient means for extinguishing fires must be provided</p> <p>(a) Persons employed about aerated water-bottling machines must have their faces and heads suitably protected (b) The opening of every hoistway, lift, well-hole, or stairway must be safeguarded (c) No unsafe elevator or lift may be used (d) An inspector may require dangerous receptacles to be fenced in</p> <p>(a) Every occupier must keep a record showing— (i) name, age, and sex of every person employed (ii) nature of work done by each person (iii) hours and overtime worked (iv) ordinary and overtime wages of persons employed (v) date of engagement and of leaving employment of each person (b) Record must be produced when ever demanded by an inspector, and copy forwarded annually of prescribed particulars to the chief inspector</p>	<p>No person may be employed continuously for more than 5 hours without an interval of 1 hour for a meal</p> <p>The chief inspector may order that a fan or other mechanical means for preventing inhalation of dust be provided, also that respirators and eye-guards be provided by the occupier and used by the workers</p> <p>(a) All doors, passages, and staircases must be kept free from obstruction (b) Doors and gates forming exits must open outwards (c) Alternative means of escape must be provided for every floor above the ground floor, unless under certain circumstances one stairway out of two is fire-isolated (d) hydrants and hose or mechanical sprinklers or chemical extinguishers or fire-buckets must be provided</p> <p>(a) Every occupier must keep a record showing— (i) names of persons employed (ii) number of persons of each sex and age under 21 years of age, and number of years at trade if under 21 years (iii) work done by each person (iv) hours of work (v) daily or weekly earnings on wages or piece-work (vi) date (if any) of leaving employment (b) Record must be produced when required, and a copy sent annually to the chief inspector</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACTORIES—			
24. <i>Records and Registration of Outworkers</i>	A record must be kept and forwarded to an inspector, when required, of— (a) the name and address of every outworker (b) the age of each outworker under 21 years (c) the kind of work done by each (d) the amount of weekly earnings on wages or piece-work	(a) A record must be kept of the description and quantity of work done outside, and of the name and address of the outworker and the prices paid. Such record must be open to an inspector, and a copy forwarded to the chief inspector when demanded (b) Every outworker must register his name and address with the chief inspector	(a) A record must be kept and forwarded quarterly to an inspector showing— (i) the name and address of each person employed (ii) the situation of the place where the work is done (iii) the kind of work done by each person (iv) the quantity of work done weekly (v) the remuneration paid (b) Members of a family may obtain a permit to work together at home (c) Every outworker must register his name and address with an inspector
25. <i>Definition of "Child"</i>	Any person under the age of 14 years	A boy under the age of 14 years or a girl under the age of 15 years	Any person under the age of 14 years
26. <i>Prohibition of Child Labour, etc.</i>	(a) No child under 14 years of age may be employed, unless by special permission of the Minister, which must not be given to a child under 13 (b) The Minister may prohibit the employment of males under 16 and of females in any undesirable work	(a) No male child under 14 years or female child under 15 years of age may be employed, but the chief inspector may grant permission to work to a female child over 14 who is not required to attend school (b) The Governor may prohibit the employment of persons under 18 years about dangerous machinery	(a) No child under 14 years of age may be employed except in cases where the Minister grants special permission, but such permission may not be granted to any child under 13 years of age (b) The Minister may prohibit the employment of males under 16 and females in unhealthy processes
27. <i>Certificates of Physical Fitness</i>	A person under 16 years must not be employed in certain scheduled factories unless he has obtained a certificate of fitness from a legally qualified medical practitioner	Every employee under 16 years must obtain a certificate of fitness from a certifying medical practitioner for the district before being employed in certain scheduled factories or if required by the chief inspector	A person under 16 years must not be employed in scheduled classes of factories unless he has obtained from a legally qualified medical practitioner a certificate of his fitness for employment in such factory
28. <i>Prohibition of Employment of Women before or after Confinement</i>	No female may be employed during the four weeks immediately after her confinement	..	..
29. <i>Prohibition of Employment of—</i>	..	..	..
(a) <i>Males under 14 years</i>	..	..	..
(b) <i>Males under 16 years</i>	(a) In the part of the factory in which the process of melting or annealing glass is carried on (b) In a part of a factory in which there is carried on— (i) any dry grinding in the metal trade; or (ii) the dipping of lucifer matches (c) Where continuous casting from molten lead is carried on in a printing establishment. (d) The care or working of any elevator or lift	(a) In a part of a factory in which there is carried on— (i) any dry grinding in the metal trade; or (ii) the dipping of lucifer matches (b) As type-setter in a printing office for longer than 8 hours, or between 6 p.m. and 6 a.m., except in case of emergency with the permission of the Minister	(a) In any part of a factory in which wet spinning is carried on unless means are taken against wetting (b) In the process of bronzing (unless an approved machine is used) (c) In the silvering of mirrors by the mercurial process (d) In the making of lead-headed nails (e) In the making of white lead (f) In dry grinding in the metal trade (g) In any part of a factory in which melting or annealing glass is carried on

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<i>continued.</i>		
<p>(a) A record must be kept showing— (i) the name and address of each outworker (ii) the description and quantity of work done (iii) the price paid for such work A copy must be sent annually during the first week in December to the chief inspector and be published in the Gazette (b) Every outworker must register his name and address with the chief inspector</p>	<p>(a) A record must be kept showing— (i) the name and address of each outworker (ii) the place where work is done (iii) the quantity and kind of work done (iv) the rate of payment (b) Every outworker who prepares or manufactures clothing, wearing apparel, curtains, cushions, or upholstery must register with the chief inspector— (i) his full name (ii) the premises where the work is to be carried out (iii) the number of persons to be employed</p>	<p>A record must be kept and forwarded annually during the first week in December to the chief inspector showing— (a) the name and address of each outworker (b) the description and quantity of work done (c) the average earnings per week (d) the percentage of work done outside the factory</p>
A person under the age of 13 years	A male person under the age of 14 years or a female under the age of 15 years	A person under the age of 14 years
<p>(a) No child under 13 years of age may be employed, who has not— (i) passed the compulsory educational standard; and (ii) obtained the permission of the chief inspector to be employed (b) The Governor may prohibit the employment of persons under 16 years about dangerous machinery</p>	No male child under 14 years or female child under 15 years may be employed	No child under 14 years of age may be employed
Every employee under 16 years must obtain a certificate of fitness from the certifying medical practitioner for the district	An inspector may require any person under 16 years, whom he deems to be physically unfit, to produce a certificate of fitness from a medical officer of health	<p>Every employee under 16 years must obtain from a medical practitioner a certificate of fitness— (a) in cases of employment in certain scheduled trades (b) in cases where the chief inspector requires the same</p>
	No woman may be employed during the six weeks immediately prior to or after her confinement	
<p>(a) In any part of a factory in which the process of melting or annealing glass is carried on (b) In fustian cutting or grinding in the metal trades</p>		
<p>(a) In any part of a factory in which is carried on— (i) any dry grinding in the metal trade; or (ii) the dipping of lucifer matches (b) As type-setter in a printing office for longer than 8 hours in a day or between 6 p.m. and 6 a.m., except with permission of the chief inspector</p>	In any part of a factory in which the dipping of lucifer matches is carried on	<p>(a) In any part of a factory in which is carried on— (i) any dry grinding in the metal trade; or (ii) the dipping of lucifer matches (b) As type-setter in a printing office— (i) for longer than 8 hours in any one day; or (ii) between 9 p.m. and 6 a.m. unless the chief inspector grants a certificate of exemption</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACORIES—			
(c) <i>Males under 18 years</i>	(a) In a part of a factory in which there is carried on the process of— (i) silvering of mirrors by the mercurial process; or (ii) making white lead (b) Cleaning mill-gearing while in motion (c) Working between the fixed and traversing part of any self-acting machine in motion	(a) In a part of a factory in which there is carried on the process of— (i) silvering of mirrors by the mercurial process (ii) making white lead (b) In any part of a factory in which wet-spinning is carried on, unless sufficient means are employed to prevent wetting (c) Cleaning mill-gearing in motion (d) Working between the fixed and traversing part of a self-acting machine while in motion	
(d) <i>Females under 14 years</i>			
(e) <i>Females under 16 years</i>	(a) In a part of a factory in which there is carried on— (i) any dry grinding in the metal trade; or (ii) the dipping of lucifer matches (b) Where continuous casting from molten lead is carried on in a printing establishment	(a) In a part of a factory in which there is carried on— (i) any dry grinding in the metal trade; or (ii) the dipping of lucifer matches	
(f) <i>Females under 18 years</i>	(a) In a part of a factory in which there is carried on the process of— (i) silvering of mirrors by the mercurial process; or (ii) making white lead (b) In the part of a factory in which the process of melting or annealing glass is carried on (c) In a factory in which there is carried on the making or finishing of— (i) bricks or tiles, not being ornamental tiles; or (ii) salt	(a) In a part of a factory in which there is carried on the process of— (i) silvering of mirrors by the mercurial process (ii) making white lead (b) In a part of a factory in which melting or annealing glass is carried on (c) As typesetter in a printing office for longer than 8 hours, nor between 6 p.m. and 6 a.m. except with the permission of the Minister (d) Lifting or carrying a greater weight than 25 lbs.	
(g) <i>All Females</i>	(a) The care or working of any elevator or lift (b) Cleaning mill-gearing while in motion (c) Working between the fixed and traversing part of a self-acting machine while in motion	(a) In any part of a factory in which wet spinning is carried on unless sufficient means are employed to prevent wetting (b) Cleaning mill-gearing while in motion (c) Working between the fixed and traversing part of a self-acting machine while in motion	(a) In any part of a factory in which wet spinning is carried on unless sufficient means are employed to prevent wetting (b) In the process of bronzing (unless an approved machine is used) (c) In silvering mirrors by the mercurial process (d) In making white lead (e) In making lead-headed nails (f) In dry grinding in the metal trade (g) In any part of a factory in which melting or annealing glass is carried on
30. <i>Working Hours of Females and Young Persons</i>	No male under 16 years of age and no female may be employed for more than 48 hours in any one week	No male under 16 and no female may be employed— (a) for more than 48 hours in a week (b) for more than 10 hours in a day	No male under 16 and no female may be employed— (a) for more than 48 hours in a week (b) for more than 10 hours in each 24 hours (c) after 1 p.m. on the weekly half-holiday for shops

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<i>continued.</i>		
<p>(a) In any part of a factory in which wet-spinning is carried on unless sufficient means are used to prevent wetting</p> <p>(b) In any part of a factory in which there is carried on the process of—</p> <p>(i) silvering of mirrors by the mercurial process; or</p> <p>(ii) making white lead</p> <p>(c) Care or working of an elevator or lift</p> <p>(d) Cleaning mill-gearing in motion</p> <p>(e) Working between the fixed and traversing part of a self-acting machine while in motion</p>	<p>(a) In any part of a factory in which there is carried on the process of—</p> <p>(i) silvering of mirrors by the mercurial process; or</p> <p>(ii) making white lead</p> <p>(b) Cleaning mill-gearing while in motion</p> <p>(c) Care, custody, management, or working of any elevator or lift, unless exempted by the chief inspector</p>	<p>(a) In any part of a factory in which wet-spinning is carried on unless the prescribed precautions are taken against wetting</p> <p>(b) In any part of a factory in which there is carried on the process of—</p> <p>(i) silvering of mirrors by the mercurial process; or</p> <p>(ii) making white lead; or</p> <p>(iii) lead-glazing of pottery</p>
In fustian-cutting or any grinding in the metal trades		
<p>(a) In a factory in which there is carried on the making or finishing of—</p> <p>(i) bricks or tiles, not being ornamental tiles; or</p> <p>(ii) salt</p> <p>(b) In any part of a factory in which there is carried on—</p> <p>(i) any dry grinding in the metal trade; or</p> <p>(ii) the dipping of lucifer matches</p>	<p>(a) In a factory in which there is carried on the making or finishing of—</p> <p>(i) bricks or tiles, not being ornamental tiles; or</p> <p>(ii) salt</p> <p>(b) In any part of a factory in which the dipping of lucifer matches is carried on</p> <p>(c) As a type-setter in a printing office</p>	<p>(a) In a factory in which there is carried on the making or finishing of—</p> <p>(i) bricks or tiles, not being ornamental tiles; or</p> <p>(ii) salt</p> <p>(b) In any part of a factory in which there is carried on—</p> <p>(i) any dry grinding in the metal trade; or</p> <p>(ii) the dipping of lucifer matches</p> <p>(c) In any part of a laundry</p>
<p>(a) In any part of a factory in which there is carried on the process of—</p> <p>(i) silvering of mirrors by the mercurial process; or</p> <p>(ii) making white lead</p> <p>(b) Under 20 years lifting or carrying a greater weight than 25 lbs.</p>	<p>(a) In any part of a factory in which the process of melting or annealing glass is carried on</p> <p>(b) The care or working of an elevator or lift unless exempted by the chief inspector</p>	
<p>(a) In any part of a factory in which wet spinning is carried on unless sufficient means are used to prevent wetting</p> <p>(b) The care or working of an elevator or lift</p> <p>(c) Cleaning mill-gearing while in motion</p> <p>(d) Working between the fixed and traversing part of a self-acting machine while in motion</p> <p>(e) As typesetter for more than 8 hours or between 6 p.m. and 6 a.m.</p>	<p>(a) In any part of a factory in which there is carried on the process of—</p> <p>(i) silvering of mirrors by the mercurial process; or</p> <p>(ii) making white lead</p> <p>(b) Cleaning mill-gearing while in motion</p>	<p>(a) In any part of a factory in which wet spinning is carried on unless prescribed means are used to prevent wetting</p> <p>(b) In any part of a factory in which is carried on the process of—</p> <p>(i) silvering of mirrors by the mercurial process; or</p> <p>(ii) making white lead; or</p> <p>(iii) lead-glazing of pottery</p> <p>(c) In any part of a factory in which any offensive trade, except candle-making and soap-boiling is carried on</p> <p>(d) As typesetter for longer than 8 hours or between 9 p.m. and 6 a.m.</p>
<p>No male under 16 and no female may be employed for more than—</p> <p>(a) 48 hours in any one week; or</p> <p>(b) 10 hours in any one day</p>	<p>No male under 16 and no female may be employed—</p> <p>(a) for more than 44 hours in any one week</p> <p>(b) for more than 8½ hours in any one day</p> <p>(c) on any holiday or after 1 p.m. on the weekly half-holiday</p>	<p>No male under 16 and no female may be employed—</p> <p>(a) for more than 48 hours in any one week</p> <p>(b) for more than 10 hours in any one day</p> <p>(c) after 1 p.m. on one working day in each week</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
A.—FACTORIES—			
31. <i>Maximum Number of Hours Overtime allowed for Males under 16 and Females</i>	Three hours in any day on not more than 30 days in a year or, when the Minister is satisfied, 60 days. Not more than three consecutive days with overtime allowed	(a) Fifty-seven hours in any week or not more than 8 weeks in a year (b) Ten hours on any one day. Consent of employee must be obtained	Three hours in any day, on not more than two consecutive days and on not more than 40 days in a year, and aggregate hours worked in a week must not exceed 56. Consent of inspector must be obtained
32. <i>Rates of Pay for Overtime for Males under 16 and Females</i>	Time and a half, but not less than 3d. per hour	Time and a half on wages rates or 3d. per hour extra on piece-work prices	(a) <i>Time-workers</i> .—Time and a half (b) <i>Piece-workers</i> .—3d. an hour in addition to piece-work rates, but in no case may the payment be less than 6d. per hour
33. <i>Minimum Allowance for Tea-money—Males under 16 and Females</i>	Sixpence	One shilling	Sixpence
34. <i>Minimum Wage (Juniors)</i>	Four shillings per week ..	Two shillings and sixpence per week	Seven shillings and sixpence per week
35. <i>Payment of Wages</i>	..	All wages due to every person employed in an occupation subject to any determination of a Wages Board must be paid at least once in every fortnight	..
36. <i>Prohibition of Premiums and Bonuses</i>	No premium or bonus may be given or received for the engaging or employing of any female in preparing or manufacturing articles of clothing or wearing apparel for trade or sale	No premium or bonus may be given or received for engaging or employing any female as an apprentice or improver in preparing or manufacturing articles of clothing or wearing apparel	No person, without the consent of an inspector, may require or permit any person to give, or may receive any premium or bonus for engaging or employing any male under 16 years or female under 21 years in any factory
37. <i>Limitation of Night-work</i>	No male under 16 or female may be employed between 6 p.m. and 6 a.m. unless in the case of overtime	(a) No male under 16 and no female may work later than 9 p.m. (b) No female under 16 may work between 6 p.m. and 6 a.m.	No male under 16 and no female under 18 may be employed between 6 p.m. and 6 a.m.
38. <i>Hours of Employment in Chinese and certain other Factories</i>	Where any Chinese works, and in any furniture factory no work may be done on— (a) Mondays to Fridays before 7.30 a.m. or after 6 p.m. (b) Saturday, before 7.30 a.m. or after 1 p.m. (c) Sunday	In a factory in which any Chinese person is employed and in a furniture factory, no person may work before 7.30 a.m. or after 5 p.m. or on a Saturday after 2 p.m. or on a Sunday at any time	..
39. <i>Stamping Furniture</i>	..	(a) All furniture made in the State must be stamped with the manufacturer's name and address and either— (i) "European labour only" if made solely by European labour; or (ii) "Chinese labour" if made solely by Chinese labour; or (iii) "European and other labour" if made partly by each kind of labour (b) Imported furniture must be stamped "imported furniture"	(a) All furniture made in Queensland must be stamped with the maker's mark, and with either— (i) "European labour only" if made solely by European labour; or (ii) "Chinese labour" if made solely by Chinese labour; or (iii) "European and other labour" if made partly by each kind of labour (b) Imported furniture must be stamped "imported furniture"

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<i>continued.</i>		
(a) Fifty-five hours in one week, but the aggregate number over 48 hours per week must not exceed 100 hours in any one year (b) Minister may allow up to 3 hours in a day and 66 hours in a week	Two hours in any day on not more than two consecutive days in a week or on more than 52 days in a year. No overtime allowed on a holiday or half holiday	Fifty-five hours in one week, but the aggregate number of hours above 48 per week must not exceed 200 hours in any one year
(a) <i>Wage-workers</i> .—Time and a quarter (b) <i>Piece-workers</i> .—Rate and a quarter	(a) <i>Piece-workers</i> .—Rate and a half (b) <i>Time-workers</i> .—Minimum 6d. per hour where wages do not exceed 10s. a week, otherwise 9d. per hour	Time and a quarter for wage-workers and rate and a quarter for piece-workers
One shilling and sixpence ..	..	If earning less than 15s. a week, sixpence
Ten shillings per week	Ten shillings per week	Four shillings per week
..	Payment of minimum wages must be made in full at not longer than fortnightly intervals	Payment of minimum wages must be made in full at not longer than fortnightly intervals
No person may require or permit any person to give or receive from any person any premium or bonus for engaging or employing a female as an apprentice or improver in preparing or manufacturing articles of clothing or wearing apparel	No premium in respect of the employment of any person may be paid or received by the occupier of any factory	No premium in respect of the employment of any person may be paid to or be received by an occupier of a factory
No male under 16 and no female may be employed after 9 p.m.	(a) No female may be employed between 6 p.m. and 8 a.m. (b) No male under 16 may be employed between 6 p.m. and 7.45 a.m.	No male under 16 and no female may be employed later than 9 p.m.
In a factory where any Chinese person is employed, no person may work— (a) on any day before 7.30 a.m. or after 5 p.m. (b) on a Saturday after 2 p.m. (c) on a Sunday	No person of Chinese or other Asiatic race may be employed for longer hours than women may be employed, nor before 8 a.m. or after 5 p.m.	..
..	All furniture, when manufactured in the State, must be stamped— (a) "European labour only" when made solely by European labour; or (b) "Asiatic labour" when made solely or partly by Asiatic labour	..

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
B.—			
1. <i>Acts in Force</i>	Factories and Shops Act 1912 Early Closing Acts 1899, 1900, 1906, 1910, 1915, 1919 Saturday Half-holiday Act 1910	Factories and Shops Acts 1915, 1919, 1920 (2), 1922	Factories and Shops Acts 1900, 1908, 1914, 1916 (2), 1920
2. <i>Application of Acts</i>	(a) The provisions of the Factories and Shops Acts apply to proclaimed districts (b) The provisions of the Early Closing Acts apply to the Metropolitan and Newcastle shopping districts, municipalities and any other area proclaimed to be a country shopping district	Except where otherwise expressly provided, the provisions of the Act apply to shops wherever situate in Victoria	The provisions of the Act extend to and are in force in such districts as the Governor may constitute
3. <i>Districts to which Early Closing Provisions apply</i>	(a) Metropolitan and Newcastle Districts (b) Country Districts include every other municipality and any other area proclaimed by the Governor	(a) Metropolitan District (b) Outside the Metropolitan District	The Governor may constitute the area within the boundaries of one or more Local Authorities to be a district
4. <i>Definition of a "Shop"</i>	"Shop" means any building or place, or portion of a building or place, in which goods are exposed or offered for sale by retail (<i>Factories and Shops Act</i>). Stalls, tents, vehicles, boats, and packs, also hairdressers', pawnbrokers', and undertakers' shops are included in and "by retail" omitted in <i>Early Closing Act</i>	"Shop" means any building or portion of a building or place, or any stall, tent, vehicle, or pack in which goods are exposed or offered for sale by retail, and includes hairdressers', barbers', boot repairers', dyers', and clothes cleaners' shops	"Shop" means any building or place, or portion of a building or place, or any stall, tent, vehicle, boat, or pack in or from which goods are sold or exposed or offered for sale by retail or wholesale, or are delivered or disposed of. The term includes hairdressers' and barbers' shops but not commercial travellers' sample rooms
5. <i>"Scheduled" or Exempted Shops</i>	Chemists and druggists, private and public dispensaries, flower shops, fruit, vegetable, confectioners', newspaper and newsagents' shops, public houses, hotels, and wine shops, undertakers, restaurants, refreshment shops, eating-houses, fish shops, oyster shops, cooked provision shops	Bread shops, confectionery and pastry shops, eating-houses, fish and oyster shops, flower shops, fruit and vegetable shops, booksellers and newsagents' shops, cooked meat (other than tinned meat) shops	Chemists and druggists' shops, confectioners' shops, fish and oyster shops, fruit, vegetable, and temperance beverage shops, restaurants and refreshment shops, tobacconists' shops, booksellers, and newsagents and railway bookstalls, bread and biscuit shops, undertakers' establishments
6. <i>Registration of Shops</i>		Every shop must be registered within 14 days after occupation and fees paid annually before the 1st of March	Every shop must be registered not less than 7 days before being occupied, and a fee paid annually on or before the 31st January
7. <i>Appointment of Inspectors</i>	(a) The Governor may appoint inspectors of factories and shops (<i>Factories and Shops Act</i>) (b) The Minister may appoint members of the police force or other persons to be inspectors (<i>Early Closing Act</i>)	Subject to the Public Service Act the Governor may appoint a chief inspector and inspectors of factories and shops	The Governor may appoint a chief inspector and so many inspectors and other officers as may appear necessary for carrying into effect the provisions of the Act

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
SHOPS.		
Industrial Code 1920, 1921 Early Closing Acts 1911, 1912	Factories and Shops Acts 1920, 1922	Factories Acts 1910, 1911, 1917 Shops Closing Acts 1911, 1913
(a) The <i>Industrial Code</i> , in so far as it refers to shops, applies to the metropolitan and any proclaimed area (b) The <i>Early Closing Act</i> applies to the Metropolitan, the Murray Bridge, and other proclaimed shopping districts	The Act applies to the whole State, but the Governor may exempt any portion of the State from the operation thereof or of any portion of the Act	Both Acts apply to the whole State
(a) Metropolitan Shopping District (b) Murray Bridge Shopping District (c) Such Shopping Districts as may be constituted on petition to the Minister	(a) Metropolitan Shopping District (b) Any defined portion of the State proclaimed a shop district by the Governor	Municipalities
"Shop" means and includes— (a) the whole or any portion of a building, stall, tent, vehicle, platform, ship, boat, or pack, or any place in which goods are offered or exposed for sale (<i>Early Closing Act</i> 1912 adds "by retail") (b) a hairdresser's, pawnbroker's, or undertaker's premises	(a) "Shop" means any building or place or portion of a building or place, or any stall, tent, vehicle, or boat in or from which goods are sold or exposed or offered for sale by retail, and includes the so-called "Scheduled Shops" (b) "Warehouse" means any place where goods are sold or distributed by wholesale	"Shop" means place, building, stall, vehicle, or tent in which goods are offered or exposed for sale to the public, or a hairdresser's shop, or any portion of a building which is separated from the rest of a building by a substantial partition, and in which goods are offered or exposed as aforesaid, or in which a hairdresser's business is carried on
Chemists and druggists' shops, restaurants and eating-houses, cooked meats other than tinned meats, bakers' small goods and bread, fish and oyster shops, confectionery shops, non-alcoholic drink shops, fruit, flower, vegetable shops, railway bookstalls, undertakers' shops, public houses and wine shops, milk, tobacconists and hairdressers' shops	Bakers, newsagents' shops, stationers and booksellers, railway bookstalls, florists, confectioners, fruit, vegetable, milk shops, tobacconists, chemists or druggists, restaurants, coffee palaces, boarding-houses, refreshment shops, cooked meat shops, licensed hotels and wine shops, undertakers, newspaper offices	Florists, news-vendors, fish and oyster shops, vegetable, fruit shops, confectioners, licensed hotels and public houses, railway refreshment rooms, restaurants and tea rooms, milk vendors, cooked meat shops, undertakers
Every shop must be registered within 21 days after the occupier goes into occupation thereof	Every shop and warehouse must be registered within one month after going into occupation, and an annual fee paid on or before the 31st December	Ordinary shops are not registered, but small shops and shopkeepers of such shops must be registered annually with the chief inspector of factories
(a) The Governor may appoint a chief inspector and inspectors (<i>Industrial Code</i>) (b) The chief inspector of factories is to be chief inspector of shops, and the Governor may appoint inspectors of shops (<i>Early Closing Act</i>)	(a) The Governor may appoint a chief inspector of factories (b) The Minister may appoint persons of either sex to be inspectors of factories (c) The inspection of shops is under the jurisdiction of these inspectors	(a) The Governor may appoint a chief inspector and other inspectors of factories (<i>Factories Act</i>) (b) Every member of the police force is without further appointment an inspector under the <i>Shops Closing Act</i>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
B.—SHOPS—			
8. <i>Inspection of Shops</i>	<p>Every inspector has power—</p> <p>(a) to enter, inspect, and examine, at all reasonable hours by day or night, any shop when he believes that any person is employed, and to enter by day any place which he believes to be a shop</p> <p>(b) to take with him an officer of health, or inspector of nuisances, or interpreter, or constable</p> <p>(c) to require the production of and examine any documents required to be kept</p> <p>(d) to ascertain whether the provisions of any <i>Public Health Act</i> are complied with</p> <p>(e) to examine any employee</p> <p>(f) to conduct prosecutions</p> <p>(g) to exercise all other necessary powers under the Act</p>	<p>Every inspector has power—</p> <p>(a) to enter at all reasonable times any shop and to examine any employee</p> <p>(b) to enter, inspect, and examine at all reasonable times by day or night any place in which he believes that any person is employed at board rates</p> <p>(c) to require the production of all pay-sheets or books relating to employees paid at board rates</p> <p>(d) to require the production of the certificate of registration and other documents required by the Act</p> <p>(e) to examine any employee believed to have been employed during the preceding two months at board rates</p> <p>(f) to exercise other necessary powers under the Act</p>	<p>An inspector may—</p> <p>(a) enter, inspect, and examine, at all reasonable hours by day or night, any shop and any place which he believes to be a shop</p> <p>(b) take with him a legally-qualified medical practitioner and a member of the police force</p> <p>(c) ascertain whether the provisions of the Act and of any <i>Health Act</i> are complied with</p> <p>(d) examine any employee or any person whom he believes to have been an employee within the preceding two months</p> <p>(e) require the production of any documents required by the Act</p> <p>(f) exercise other necessary powers under the Act</p>
9. <i>Notices to be posted up in a Shop</i>		<p>Notices must be posted up—</p> <p>(a) at or near the entrance containing—</p> <p>(i) the name and address of the inspector for the district, and</p> <p>(ii) prescribed abstracts from the Act and Regulations</p> <p>(b) near the outside of the principal door containing the name of the occupier</p>	<p>A notice must be posted up at or near the entrance containing—</p> <p>(a) the name and address of the inspector</p> <p>(b) the ordinary working hours of—</p> <p>(i) boys under 16 years</p> <p>(ii) females</p> <p>(iii) all other employees</p> <p>(c) the time allowed for meals</p>
10. <i>Records of Employees in Shops</i>	<p>A record must be kept of all employees in a shop, together with the ages of all employees under 21 years of age</p>	<p>Every occupier of a shop must keep a weekly record showing—</p> <p>(a) the name of the employee</p> <p>(b) the description of work</p> <p>(c) the number of hours worked</p> <p>(d) the amount of week's earnings of males and females under and over 21 years of age separately</p>	<p>Records must be kept of male and female employees separately as at the 31st March showing—</p> <p>(a) the name of each employee</p> <p>(b) the date of commencing and of leaving employment</p> <p>(c) the age, if under 21 years</p> <p>(d) the kind of work done</p> <p>(e) the ordinary working hours per day</p> <p>(f) rate of wages</p> <p>(g) rate paid for overtime</p>
11. <i>Provisions regarding Cleanliness</i>	<p>Every shop must be kept in a cleanly state and free from effluvia arising from any drain, closet, urinal, or other nuisance</p>		<p>Everything and every place upon and surrounding the premises must be kept in a cleanly state, and free from any smell or nuisance and from any accumulation or deposit which is a nuisance</p>
12. <i>Ventilation of Shops</i>	<p>Every shop must contain not less than 400 cub. ft. of space for each employee, up to a maximum height of 14 ft., and, when required by an inspector, must be provided with inlet and outlet openings of not less than 12 sq. in. each for each employee</p>	<p>Every new shop must have either—</p> <p>(a) natural ventilation, so that there is in each room an area of windows capable of being opened equal to at least one-twentieth of the floor area: or</p> <p>(b) mechanical ventilation, so that the whole of the air is changed at least four times in each hour</p>	<p>Every shop must contain not less than 400 cub. ft. of air space (calculated to a height of 13 ft.) nor less than 25 sup. ft. of floor area, for each person, and, when required by an inspector, be provided with inlet and outlet openings of not less than 12 sq. in. each for each employee</p>

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<i>continued.</i>		
<p>An inspector may—</p> <p>(a) enter, inspect, and examine—</p> <p>(i) at any time any shop, office, or warehouse in which he believes that any person is employed</p> <p>(ii) at all reasonable times any place which he believes to be a shop, office, or warehouse</p> <p>(b) take with him a constable and an interpreter</p> <p>(c) ascertain whether the provisions of the <i>Industrial Code</i> and health laws are complied with</p> <p>(d) report any breaches of the health law to the Board of Health</p> <p>(e) question any employee</p> <p>(f) require the production of prescribed documents</p> <p>(g) exercise any prescribed powers and authorities</p>	<p>Every inspector may—</p> <p>(a) enter, inspect, and examine a shop or warehouse at all reasonable hours by day or night when he believes that any person is employed therein, and enter by day any place which he believes to be a shop or warehouse</p> <p>(b) take with him a member of the police force and a constable</p> <p>(c) ascertain whether the provisions of the Act and of the <i>Health Act</i> and of all awards and agreements are complied with</p> <p>(d) question any employee</p> <p>(e) require the production of any certificate of registration or documents required by the Act and pay-sheets</p> <p>(g) exercise other powers and authorities under the Act</p>	<p>An inspector or any inspector appointed under the <i>Factories Act</i> may—</p> <p>(a) enter at any reasonable hour any shop or any place which he believes is used as a shop</p> <p>(b) ascertain whether the provisions of the <i>Shops Closing Act</i> are complied with and question any shopkeeper or employee</p> <p>(c) exercise such powers as may be necessary for carrying out the provisions of the <i>Shops Closing Act</i></p>
	<p>In "scheduled" shops a time table or roster must be posted up in an approved position in the shop at the opening time daily showing—</p> <p>(a) the name of each assistant, and</p> <p>(b) the hours during which each assistant is required to work on each day</p>	
	<p>A record must be kept showing—</p> <p>(a) the name and sex of each assistant</p> <p>(b) the age of each assistant under 23 years</p> <p>(c) the class of work performed</p> <p>(d) the hours of work</p> <p>(e) the wages paid during each week</p>	
<p>Every warehouse and shop must contain not less than 400 cub. ft. of clear air space (calculated to a height of 14 ft.) and inlet and outlet openings each of not less than 12 sq. in. for each employee</p>	<p>Every shop and warehouse must contain not less than 350 cub. ft. of reserved space (calculated to a height of 14 ft.), and, when required by an inspector, inlet and outlet openings of not less than 12 sq. in. each for each employee</p>	

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
B.—SHOPS—			
13. <i>Sanitary Arrangements</i>	(a) <i>Privies</i> .—One for every 15 persons of each sex within the City of Sydney and for every 20 elsewhere (b) <i>Urinals</i> .—As required and specified by an inspector	(a) <i>Privies</i> .—One for every 20 persons of each sex (b) <i>Urinals</i> .—Adequate accommodation must be provided where the number of male workers exceed 3	(a) <i>Privies</i> .—One for every 15 females or 20 males, separated (b) <i>Urinals</i> .—Where 2 or more males or 12 or more females are employed, 1 for every 40 persons
14. <i>Sitting Accommodation</i>	Every shop must be provided with sitting accommodation for females in the proportion of one seat to every three females employed	Sitting accommodation must be provided for all persons employed in the proportion of one seat to every three persons employed	Sitting accommodation must be provided for all female employees in the proportion of one seat to every three females employed
15. <i>Intervals for Meals</i>	No male under 18 years and no female may be employed continuously for more than 5 hours without an interval of at least $\frac{1}{2}$ hour for a meal	No person may be employed more than 5 hours without an interval of at least $\frac{1}{2}$ hour for a meal	No person may be employed continuously for more than 5 hours without an interval of at least $\frac{1}{2}$ hour for a meal
16. <i>Limitation of Hours of Work</i>	(a) No male under 16 years or female under 18 years may work in a shop for longer than 52 hours in any one week or than $9\frac{1}{2}$ hours in any one day, except on one day when $11\frac{1}{2}$ hours may be worked. This provision does not apply to such employees in "scheduled" shops for whom the Governor may make regulations (b) No assistant may be employed in any "scheduled" shop for more than 60 hours in any week	(a) No person, other than a carter, porter, or night watchman, may work in a shop for longer than 52 hours in any one week or 9 hours on any one day, except 12 hours on one day or on two days if the shop is closed for a public holiday (b) In "scheduled" shops no female may be employed for more than 56 hours, and no male for longer than 58 hours in any one week	(a) No person may be employed for longer than 53 hours in any one week or $9\frac{1}{2}$ hours in any one day, except $11\frac{1}{2}$ hours on one day (b) No person may be employed in a butcher's shop for more than 60 hours in any one week (c) In "exempted" shops no person may work longer than 53 hours in any one week, except in hotel bars and chemists' shops 60 hours, and no male under 16 or female for longer than 10 hours in any one day, and no male under 16 or female under 18 may be employed after 8 p.m., except on late-closing night
17. <i>Overtime allowed</i>	(a) An assistant may be employed on any 12 week days in a half-year (not being early or late closing days or holidays) for not exceeding 3 hours after closing time [<i>Early Closing Act</i>] (b) A male under 16 and a female under 18 years may be employed for 3 hours overtime on any day for not exceeding 52 days in a year, but must be paid at least 3d. per hour overtime and 6d. tea money [<i>Factories and Shops Act</i>]	(a) A shop assistant may work overtime not exceeding 3 hours in any one day, but on not more than 25 days in any one year, and must be paid at a rate of time and a half, with a minimum of 6d. per hour and not less than 1s. tea money (b) In "scheduled" shops a person may be employed overtime for not exceeding 10 hours in any one week. Provided that— (i) the number of weeks in any year does not exceed six (ii) overtime rate of time and a half is paid (iii) 6d. tea money is paid	(a) An employee not under 16 years of age may work not more than 3 hours overtime in any one day, but on not more than 40 days in a year (b) No overtime allowed on a half-holiday (except two in a year) or on more than two consecutive nights (c) Overtime to be paid at time and a half with a minimum of 6d. per hour (d) When overtime is worked before 7 a.m. or after 6.30 p.m. males under 16 years and females must be paid 6d. for tea money
18. <i>Previous Employment on same Day</i>	No male under 16 years and no female under 18 years may be employed if previously employed on the same day in a factory for 8 hours or in a factory and shop together for more than 8 hours	No male under 16 years and no female may be employed if previously employed on the same day in a factory for 8 hours or in a factory and shop together for more than 8 hours	No person under 18 years may be employed if previously employed in a factory for 8 hours or in a factory and shop together for more than 8 hours

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<p><i>continued.</i></p> <p>In every shop, office, warehouse, or building in which persons are employed there must be privies and urinals for the use of each sex</p> <p>No person under the age of 16 years may be employed— (a) for more than 52 hours in any week; or (b) for more than 9 hours in any day, except on one day in a week, when 11 hours may be worked</p> <p>The Minister may allow a person under 16 years of age to work up to 12 hours, but on not more than 40 days in any one year</p>	<p>(a) <i>Privies.</i>—(i) If connected with sewerage, 1 to 20 females or 25 males; (ii) if not connected, 1 to 10 females or 15 males (b) <i>Urinals.</i>—As an inspector prescribes</p> <p>Sitting accommodation must be provided for female shop assistants in the proportion of at least one seat to every 3 or portion of 3 such assistants</p> <p>Every shop assistant must be allowed one hour for a meal between 11 a.m. and 3 p.m., and, when shop is open after 6.30 p.m., between 5 p.m. and 7 p.m.</p> <p>(a) No person may be employed for more than 48 hours in any one week (b) No male under 16 and no female may be employed for more than 8½ hours in any one day, except 9½ on one day, or for more than 44 hours in any one week (c) In “scheduled” shops the maximum number of hours must be completed within 12 hours (d) On a half-holiday no assistant may work more than 5 hours, which must be completed within 8 hours</p> <p>(a) A shop assistant may be employed on any number of days (not being early-closing days or public holidays) not exceeding 12 in any half-year for not exceeding 2½ hours’ additional time (b) Overtime rate, time and a quarter, with a minimum of 6d. per hour for assistants earning 10s. a week or less, and of 9d. per hour for other assistants (c) Tea money not less than 1s. must also be paid</p>	<p>In every retail business, sitting accommodation must be provided for all females employed, in the proportion of one seat to every 3 females employed</p> <p>No person under 16 years and no woman may be employed more than 5 hours without an interval of at least ½ hour for a meal</p> <p>No person under 16 years and no female may work longer than 52 hours in any one week or more than 9 hours in any one day, except on one day when 12 hours work may be done, and in every week in which a public holiday, not being on a Saturday, occurs, 12 hours’ work may be done on two days if the shop be closed for such holiday</p> <p>(a) Shop assistants may be employed during the statutory closing hours for the purpose of collecting accounts, canvassing for orders, or for any purpose in or about a shop, but must be paid at the rate of time and a quarter, with a minimum of 6d. per hour (b) A male under 16 years or a female may be employed for 3 hours in any one day beyond the ordinary working hours, but on not more than 40 days in any one year</p> <p>No person under 16 years and no female may be employed if previously employed on the same day in a factory for 8 hours or in a factory and shop together for more than 8 hours</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
B.—SHOPS—			
19. Closing Hours for Ordinary Shops	<p>(a) Metropolitan, Newcastle, and districts in the County of Northumberland—</p> <p>(i) Monday, Tuesday, Wednesday, and Thursday, 6 p.m.</p> <p>(ii) Friday, 10 p.m.</p> <p>(iii) Saturday, 1 p.m.</p> <p>(b) Country shopping districts—</p> <p>(i) Four days, 6 p.m.</p> <p>(ii) One day, 10 p.m.</p> <p>(iii) One day, 1 p.m.</p>	<p>(a) Metropolitan District—</p> <p>(i) Monday, Tuesday, Wednesday, and Thursday, 6 p.m.</p> <p>(ii) Friday, 9 p.m.</p> <p>(iii) Saturday, 1 p.m.</p> <p>(b) Country Districts—</p> <p>(i) Monday, Tuesday, Wednesday, and Thursday at 7 p.m. unless otherwise specified by by-law</p> <p>(ii) Friday, 9 p.m.</p> <p>(iii) Saturday, 1 p.m.</p>	<p>(a) Monday, Tuesday, Wednesday, and Thursday, 6 p.m.</p> <p>(b) Friday, 9 p.m.</p> <p>(c) Saturday, 1 p.m.</p> <p>Unless industrial awards provide that the ordinary working hours cease earlier</p>
20. Closing Hours "Scheduled" for Exempted Shops, etc.	<p>(A.) All districts—</p> <p>(a) Hairdressers—</p> <p>(i) Five days, 7 p.m.</p> <p>(ii) Wednesday or Saturday, 1 p.m.</p> <p>(b) Tobacconists—</p> <p>(i) Fridays, 7 p.m.</p> <p>(ii) Wednesday, 1 p.m., and Saturdays, 10 p.m.; or</p> <p>(iii) Saturday, 1 p.m., and Friday, 10 p.m.</p> <p>(c) Flower shops—</p> <p>(i) Five days, 9 p.m.</p> <p>(ii) Saturday, 11 p.m.</p> <p>(d) Confectioners and undertakers, each day, 11 p.m.</p> <p>(e) Restaurants, etc., each day, midnight</p> <p>(f) Chemists—</p> <p>(i) Four days, 7.30 p.m.</p> <p>(ii) Friday, 9 p.m.</p> <p>(iii) Saturday, 1 p.m., re-opening 7 to 9 p.m.</p> <p>(B.) Metropolitan District—</p> <p>Newsagents and book-sellers—</p> <p>(i) Monday to Thursday, 8 p.m.</p> <p>(ii) Friday and Saturday, 10 p.m.</p>	<p>(A.) "Scheduled" shops—</p> <p>(a) Metropolitan District.—</p> <p>The Governor may make regulations requiring any class of shops to be closed—</p> <p>(i) on stated days from the hours fixed; or</p> <p>(ii) on one day at 1 p.m.; or</p> <p>(iii) on stated days from the hours fixed and to re-open at hours fixed</p> <p>(b) Country Districts.—</p> <p>Any municipal council may make by-laws to the same effect</p> <p>(B.) Butchers' shops must be closed—</p> <p>(a) Metropolitan District—</p> <p>(i) Monday to Thursday, 5 p.m. to 7.30 a.m.</p> <p>(ii) Friday, 6 p.m. to 6 a.m.</p> <p>(iii) Saturday, 12.30 p.m. to Monday, 7.30 a.m.</p> <p>(b) Country Districts—</p> <p>(i) Monday to Thursday, 7 p.m.</p> <p>(ii) Friday, 9 p.m.</p> <p>(iii) Saturday, 1 p.m.</p> <p>(C.) Hairdressers and small shops in Metropolitan District—</p> <p>(a) Mondays to Thursdays, 8 p.m.</p> <p>(b) Friday, 9 p.m.</p> <p>(c) Saturday, 1 p.m.</p> <p>(D.) Tobacconists in Metropolitan District—</p> <p>(a) Monday, Tuesday, Thursday, 8 p.m.</p> <p>(b) Friday, 8 p.m., except when closed on Saturday at 1 p.m., then 9 p.m.</p> <p>(c) Wednesday, 1 p.m. or 8 p.m., optional</p> <p>(d) Saturday, 1 p.m., when Wednesday, 8 p.m., otherwise 9 p.m.</p> <p>(E.) Hairdressers and Tobacconists in Country Districts—</p> <p>(a) Monday, Tuesday, Thursday, 7 p.m.</p> <p>(b) Friday, 7 p.m., except when closed on Saturday at 1 p.m., then 10 p.m.</p> <p>(c) Wednesday, 1 p.m. or 7 p.m., optional</p> <p>(d) Saturday, 1 p.m., or when Wednesday, 1 p.m., is chosen, 10 p.m.</p>	<p>The persons carrying on business in any exempted shops or class of shops may from time to time respectively agree among themselves by ballot or such other means as the Minister approves for the appointment of a day for the half-holiday in each week, or of the hours at which such shops or class of shops shall be closed, or both of these matters</p>

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<p><i>continued.</i></p> <p>(a) In a Saturday-closing district— (i) Monday, Tuesday, Wednesday, and Thursday, 6 p.m. (ii) Friday, 9 p.m. (iii) Saturday, 1 p.m. (b) In other districts— (i) Four days, 6 p.m. (ii) Wednesday, 1 p.m. (iii) Saturday, 9 p.m.</p>	<p>(a) Five days, 6 p.m. (b) One day, 1 p.m. Except in the Metropolitan and Kalgoorlie Districts and in such districts in which a poll therefor is carried, shops may remain open until 9 p.m. on Friday or other determined day</p>	<p>(a) Four days, 6 p.m. (b) One day, 10 p.m. (c) One day, 1 p.m.</p>
<p>A petition may be presented to the Minister by a majority of the aggregate number of shopkeepers and shop assistants employed in any class of exempted shops within a shopping district praying that the closing times of such shops shall be the times specified in the petition. If no counter petition signed by at least three-fifths of the shopkeepers of the shops of the class specified in the petition is presented within the specified time, the closing times for such shops are gazetted as named in the petition</p>	<p>(a) Chemists and druggists— (i) Ordinary days, 6 p.m. (ii) Early closing day, 1 p.m., re-opening from 6.30 to 8 p.m. (iii) Sundays and public holidays, open from 6.30 p.m. to 8 p.m. (b) Bakers, newsagents, stationers, booksellers, railway bookstalls, florists, and tobacconists— (i) Monday to Friday, 8 p.m. (ii) Saturday, 10 p.m. (c) Confectioners, vegetable, fruit, and milk shops, every day 11 p.m. (d) Hairdressers— (i) Monday to Friday, 6 p.m. (ii) Saturday, 1 p.m. (or Wednesday if that day is early closing day in the district) (e) Small shops (those registered as such and kept by a widow, or an old or physically disabled person, and in which only a relative may be employed) other than scheduled shops— (i) Five week days, 8 p.m. (ii) One week day, 1 p.m.</p>	<p>(a) Hairdressers— (i) Four days, 7 p.m. (ii) One day, 10 p.m. (iii) Wednesday or Saturday, at the individual option of each, 1 p.m. (b) Chemists and druggists may open from 7 to 8 p.m. on the statutory half-holiday, on any public holiday, and on Sundays (c) Butchers in Hobart and Launceston and the suburbs thereof— (i) Mondays to Thursdays, 5 p.m. (ii) Friday, 10 p.m. (iii) Saturday, 1 p.m. (d) Small shops may remain open till 9 p.m. except on such days as all shops are allowed to remain open to a later hour</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
B.—SHOPS—			
21. Closing Times on Days preceding Public Holidays	A non-scheduled shop, except a butcher's, which is closed on any bank or public holiday and on which assistants are not employed on such day, may be kept open until 6 p.m. (hairdressers and tobacconists until 7 p.m.) on early closing day, and until 10 p.m. on the day preceding Christmas Day, New Year's Day, and Good Friday	All shops may be kept open until 9 p.m. on the day preceding a public holiday, provided that such shops are closed for the whole holiday, and for one hour later than the closing hours on the Thursday preceding Good Friday and on the last day on which the shop is open preceding Christmas Day	(a) If the occupier closes his shop for the whole of any holiday which falls on a day on which the closing time is 9 p.m., he may keep his shop open on the preceding day up to 9 p.m. (b) On the two business days preceding Christmas Day the occupier may keep his shop open until 10 p.m.
22. Special Provisions for Chemists and Druggists	A registered pharmacist may supply after closing time any drugs or patent or proprietary medicines or surgical appliances which are stated to be urgently required either by indorsement on a prescription by a legally-qualified medical practitioner or by a statement signed by the purchaser		An occupier of or any employee in a chemist's or druggist's shop may supply at any time medicine or any surgical appliance that is urgently required
23. Time allowed in which to serve Customers after Closing	(a) A shopkeeper may, within one-half hour after closing time, offer or sell goods to a customer who, at the said closing time, was in the shop being served or waiting to be served (b) A hairdresser is allowed 15 minutes after closing time to do any work for a customer who was being or was waiting to be attended to	Hairdressing or shaving may be carried on for not more than 15 minutes after the hour fixed for closing a hairdresser's or barber's shop	
24. Employment of Assistants after Closing Time	No shop assistant may be employed in or about the business of any non-scheduled shop for more than half-an-hour after closing time except when overtime (see 17) is worked	No person may be employed later than half-an-hour after the time of closing for a half-holiday	No person under 16 years, except with permission of an inspector, may be employed later than half-an-hour after the prescribed closing hour
25. Statutory Half-holiday	All shops, except scheduled shops, must close at 1 p.m. on one day a week— (a) in the Metropolitan and Newcastle districts on Saturday (b) in other shopping districts on the day chosen by taking a poll	All shops, except scheduled shops, shops for the sale of uncooked meat, hairdressers, and tobacconists must close at 1 p.m. on every Saturday	All shops, except scheduled shops, must close at 1 p.m. on Saturdays
26. Half-holiday for "Scheduled" or Exempted Shops	All shop assistants employed in "scheduled" shops must be allowed a half-holiday from 1 p.m. on some week day of every week	(a) "Scheduled" shops must close at 1 p.m. on one day in each week (b) Butchers' shops in the Metropolitan district must close at 12.30 p.m. on Saturday	All employees in exempted shops must have a half-holiday from 2 p.m. on some working day of each week

RELATING TO FACTORIES AND SHOPS IN AUSTRALIA—*continued.*

South Australia.	Western Australia.	Tasmania.
<p><i>continued.</i></p> <p>(a) When a holiday occurs on a Monday the half-holiday need not be kept in the preceding week, and closing times are 6 p.m. on Saturday or 6 p.m. on Friday and 9 p.m. on Saturday</p> <p>(b) When a holiday occurs on any other day, then in that week the half-holiday need not be kept, and the closing times are 9 p.m. on the day preceding the late day and 6 p.m. on Friday and Saturday, or 6 p.m. on Friday and 9 p.m. on Saturday</p> <p>A chemist or druggist may at any time dispense medicine provided that</p> <p>(a) nothing else is sold or delivered on such occasion: and</p> <p>(b) the shop is not kept open or unfastened after the delivery of such medicine</p> <p>A customer actually inside a shop may be served within 15 minutes after closing time</p> <p>No shop assistant may work after closing time, or remain in the shop after 30 minutes after closing time, except on early closing day, when he may work until 1.15 p.m.</p> <p>All shops, except exempted shops, must close at 1 p.m. on one day in each week—</p> <p>(a) in the Metropolitan shopping district on Saturday</p> <p>(b) in other shopping districts on such day as is determined by petition or after taking a poll</p> <p>(a) In exempted shops every assistant must be allowed on some one week day a half-holiday from 1 p.m., except in the case of those whose ordinary employment is the preparation or serving of meals or refreshments when the half-holiday commences from 2 p.m.</p> <p>(b) News-vendors may close one hour later than the ordinary times</p>	<p>(a) Small shops, which close on a holiday, may remain open till 8 p.m. on early closing day and until 10 p.m. on the week day preceding Christmas Day</p> <p>(b) Scheduled shops closing ordinarily at 8 p.m., and hairdressers' shops may remain open till 10 p.m. on the week days preceding Christmas Day, New Year's Day, and Good Friday</p> <p>Prescriptions of duly-qualified medical practitioners may be dispensed, and surgical appliances required in case of necessity may be supplied in a chemist's or druggist's shop after the hours of closing applicable to such shop</p> <p>A shopkeeper may, within half-an-hour after closing time, offer, sell to, or attend to customers who, at the said closing time, were in the shop being served or attended to or waiting to be served or attended to</p> <p>No person, except when working overtime (see 17), may be employed in a non-scheduled shop after the expiry of one half-hour from the time determined for the closing thereof</p> <p>All shops, except scheduled shops, must close at 1 p.m. on Saturday or on such other day as the Governor, on the petition of the majority of shopkeepers in a district, may declare</p> <p>(a) Small shops must close on one week day at 1 p.m.</p> <p>(b) Chemists and druggists' shops close at 1 p.m. on early closing day, but may re-open from 6.30 to 8 p.m.</p> <p>(c) Hairdressers must close at 1 p.m. on Saturday, or Wednesday, if substituted therefor in the district</p> <p>(d) In all scheduled shops and in wholesale or commission agents' places of business all assistants must be allowed a half-holiday on one day a week from 1.30 p.m., or in public houses, restaurants, etc., from 2.30 p.m.</p>	<p>The operation of the <i>Shops Closing Act</i> is suspended during three week days preceding Christmas Day and on one week day preceding New Year's Day, and whenever a public holiday or half-holiday is observed in any municipality the provisions for early closing day are suspended in the week in which such holiday occurs</p> <p>Chemists and druggists, including friendly societies' dispensaries, are permitted to supply medicines or necessities in urgent cases during the statutory closing hours</p> <p>Any person having entered a shop before the closing hour must be allowed to complete his purchases before leaving the shop</p> <p>All assistants, except in exempted shops, must be dismissed at 1.15 p.m. on early closing day</p> <p>All shops, excepted scheduled shops, must close at 1 p.m. on Saturday or on such other day as may be determined in a municipality by a poll of the electors in such municipality</p> <p>(a) Florists, news-vendors, and fish and oyster shops must close on the holiday chosen in the municipality at 1 p.m., but may re-open at 7 p.m.</p> <p>(b) Assistants in public houses, hotels, railway refreshment rooms, restaurants and eating-houses must be allowed a half-holiday a week from 2.30 p.m.</p> <p>(c) Assistants in other exempted shops must be allowed a half-holiday a week from 1 p.m. until 6 a.m.</p>

CONSPECTUS OF ACTS AND REGULATIONS

Particulars.	New South Wales.	Victoria.	Queensland.
B.—SHOPS—			
27. <i>Special Holidays</i>	(a) Bakers' carters in the metropolitan area, one whole holiday monthly (b) Bakers' carters outside the Metropolitan District and other carters in all shopping districts, four half-holidays from 2 p.m. or one whole holiday monthly	(a) One whole holiday annually on specified dates :— (i) Metropolitan and Geelong.—Butchers, bakers (ii) Metropolitan District.—Hairdressers, fruit and vegetable shops, grocers, fish and poultry shops (iii) Brushmakers, carpenters, etc. (b) One whole holiday weekly—watchmen (c) One half-holiday weekly from 1 p.m.—butchers' carters and milk carters (d) Two whole holidays weekly—bread carters	All carters must be allowed a half-holiday weekly from 1 p.m. on the day of the weekly half-holiday, and may not work longer than 48 hours inclusive of any time occupied in attending to horses unless overtime is worked; but no overtime is allowed after 1 p.m. on the weekly half-holiday

(ii) *Factories Registered.* The number of establishments registered under *Factories Acts* is shown below :—

REGISTERED FACTORIES, 31st DECEMBER, 1922.

State.	Number of Registered Factories.	Employees.		
		Males.	Females.	Total.
New South Wales	10,674	86,935	36,142	123,077
Victoria	9,410	77,897	43,917	121,814
Queensland (a)	3,426	24,411	8,409	32,820
South Australia (b)	1,981	16,033	5,759	21,792
Western Australia	1,819	16,521	3,817	20,338
Tasmania (a)	1,043	6,814	1,999	8,813
Australia	28,353	228,611	100,043	328,654

(a) At 30th June, 1922. (b) At 31st December, 1921

3. *Mining Acts.*—Under the *Mining Acts* the employment underground of all females and of boys under fourteen years is prohibited. A minimum age, usually seventeen, is fixed for employment as lander or braceman at plats and landing places; no lander, braceman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A number of provisions for the protection of the lives and health of miners is also inserted in the *Acts*. Engine-drivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations referred to above. Inspection of mines is fully provided for. Sunday labour is forbidden. In New South Wales and (since 1st February, 1910) Victoria still more advanced mining legislation exists; numerous sections are designed to ensure the well-being of the workers, such as limitation of hours, etc.

South Australia.	Western Australia.	Tasmania.
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5. **Miscellaneous.**—Other legislation regulating conditions of labour has been enacted by the States. The British Conspiracy and Protection of Property Act (38 and 39 Vic., c. 86) has been adopted in all the States except New South Wales and Queensland. Servants' registry offices are placed under administrative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them, in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

§ 3. Legislative Regulation of Wages and Terms of Contract.

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in Western Australia. In the industrial legislation of New South Wales, Queensland, and South Australia, both systems are embodied, Industrial or Wages Boards, as well as Industrial Courts, being instituted. In accordance with the provisions of the Acts in New South Wales and Queensland, the Industrial Courts in these States have been exercising the functions of Wages Boards, and the work of the existing Boards has been greatly curtailed. Practically all the awards in these States during recent years have been made by the Industrial Courts. In Victoria, Wages Boards' decisions may be reviewed by the Court of Industrial Appeals. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State. The Arbitration (Public Service) Act, assented to on the 7th October, 1920, provides for the appointment of an Arbitrator whose duties are to determine all matters submitted to him relating to salaries, wages, rates of pay, or terms or conditions of employment of officers or employees of the Commonwealth Public Service. This Act superseded that of 1911, under which Commonwealth Public Servants had access to the Commonwealth Court of Conciliation and Arbitration. The Industrial Peace Act 1920, which was assented to on 13th September, 1920, applies to industrial matters in relation to conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State. Provision is made for the appointment by the Governor-General of special tribunals for the prevention and settlement of any industrial disputes.

TRIBUNALS FOR THE REGULATION OF

Particulars.	New South Wales.	Victoria.	Queensland.
<i>Name of Act</i>	Industrial Arbitration Act 1912, 1916, 1918 (2), 1919, 1920 and 1922	Factories and Shops Act 1915, 1919, 1920 (2) and 1922 (2)	Industrial Arbitration Act 1916
<i>Nature of Tribunals</i>	Court of Industrial Arbitration. Industrial Boards. Board of Trade	Court of Industrial Appeals. Wages Boards	Court of Industrial Arbitration. Industrial Boards
<i>How the Tribunals are brought into existence</i>	Court constituted by Act. Industrial Boards by the Minister on recommendation of Industrial Court. Board of Trade constituted by Act	Court constituted by Act. Wages Boards by Governor-in-Council	Court constituted by Act. Industrial Boards by Minister on recommendation of Court
<i>Scope of Acts</i>	To any industry, etc., as the Minister on the recommendation of the Court may direct. Includes certain Government servants. Rural workers excluded. Board of Trade declarations <i>re</i> living wage, apprenticeship, etc.	To any process, trade, business, or occupation specified in a resolution of both Houses of Parliament or Order in Council (as the case may be). Government servants are not included (a)	To all callings and all persons (including Government Servants) except (1) State children; (2) domestic servants; (3) persons engaged in farming operations on dairy, fruit and agricultural farms
<i>How a matter is brought under review</i>	Reference by Court or Minister, or by application to the Board by employers (having not less than 20 employees) or industrial unions	Usually by petition to Minister	Upon reference by an industrial union or employer, or any twenty employees in any calling, or the Minister, or the Court

(a) "The Railways Classification Board Act" 1919 and 1921 provides for a special tribunal to regulate wages and hours of employment of railway employees.

The chief aims of the Wages Board system are to regulate hours, wages, and conditions of labour and employment, by the determination of a Board usually brought into existence for any specified industry or group of industries by petition or application. Under the Industrial Arbitration Court system an industry does not technically come under review until a dispute has actually arisen. Most of the Acts, however, have given the President of the Court power to summon a compulsory conference. In Victoria, where the Wages Board system is in force, there is no provision against strikes, but in Tasmania, where that system has also been adopted, penalties are provided for a lock-out or strike on account of any matter in respect of which a Board has made a determination.

Particulars were given as to the historical development, mode of constitution and general provisions of Wages Boards and Arbitration Courts in Year Book No. 9, pages 960 to 966. These refer to the regulation of wages and working conditions, and the prevention and settlement of industrial disputes.

2. **Legislation.**—The table on pages 568 to 571 deal with the Acts which operate in fixing wages, the constitutions and functions of tribunals enacted under them, and the effect and extent of the tribunals' decisions.

WAGES AND CONDITIONS OF EMPLOYMENT, 1922.

South Australia.	Western Australia.	Tasmania.	Commonwealth.(a)
Industrial Code 1920 and 1921	Industrial Arbitration Act 1912 and 1920	Wages Boards Act 1920	Conciliation and Arbitration Act 1904–1921. Arbitration (Public Service) Act 1911 and 1920. Industrial Peace Act 1920 (2)
Industrial Court. Industrial Boards. Board of Industry	Court of Arbitration	Wages Boards	Court of Conciliation and Arbitration
Court constituted by Act. Industrial Boards by the Minister on the recommendation of the Board of Industry. Board of Industry constituted by the Act	Constituted by the Act	By Governor pursuant to resolutions of Parliament and by Proclamation of Governor when Parliament not in session	Court of Record constituted by the Act
To any business, trade, manufacture, or calling carried on by way of trade or for purposes of gain (except agriculture). Includes Government servants. Board of Industry declarations <i>re</i> living wage, etc.	All industrial occupations other than domestic service. Includes certain Government workers	To any process, in industry, business, etc., except agricultural, horticultural, or pastoral pursuits	Industrial disputes extending beyond limits of any one State or in Federal Capital or Northern Territories
Court—Submission by Minister, President (after compulsory conference), employers or employers' association, by not less than 20 employees or employees' association. Industrial Boards—By petitions, etc.	Industrial disputes referred by President or by an Industrial Union or Association	Usually by petition to Minister	Industrial disputes either certified by Registrar, submitted by organization, referred by a State Industrial authority or by President after holding abortive Compulsory Conference

(a) Particulars shown relate to Conciliation and Arbitration Act 1904–1921. A brief review of the Arbitration (Public Service) Act and the Industrial Peace Act is given in Labour Report, No. 11, pp. 117–121.

TRIBUNALS FOR THE REGULATION OF

Particulars.	New South Wales.	Victoria.	Queensland.
<i>President or Chairman of Tribunal</i>	Court—Judge of Supreme Court, or a District Court Judge, or a barrister-at-law of 5 years' standing appointed by the Governor. Industrial Boards—Appointed by Minister on recommendation of Court. Board of Trade—Appointed by the Governor-in-Council	Court—Judge of Supreme Court appointed by Governor. Wages Boards—Appointed by Minister on nomination of Board, or failing that, by Minister	Court—Judge of Supreme Court or District Court or a barrister or solicitor of not less than 5 years' standing appointed by Governor. Industrial Boards—Appointed by Board, or failing that, by Minister
<i>Number of Members of Tribunal</i>	Court—Constituted by Judge or an additional or deputy judge or any two or more together. Industrial Boards—Chairman and 2 or 4 other members. Board of Trade—President, Deputy-President, 4 Commissioners	Court—President and 2 other persons. Wages Boards—Not less than 4 nor more than 10 members and a chairman	Court—Not exceeding 3, including president. Industrial Boards—Two or 4 in addition to chairman
<i>How ordinary Members are appointed</i>	Court—Appointed by Governor. Industrial Boards—Appointed by Minister on recommendation of Court. Board of Trade—By Governor-in-Council	Court—Nominated by representatives of employers and employees on Wages Board or failing that by Minister. Wages Boards—Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	Members of Court by Governor-in-Council. Members of Industrial Boards by Minister on nomination by employers and employees respectively, and on the recommendation of the Court
<i>Decisions—how enforced</i>	By Registrar and Industrial Magistrate	By Department of Labour in Courts of Petty Sessions before Police Magistrates	By Court of Industrial Arbitration on application of any party to the award or agreement, or of Registrar, or Industrial Inspector
<i>Duration of Decision</i>	For period fixed by Tribunal, but not more than 3 years, and after such period until varied or rescinded	Until altered by Board or Court of Industrial Appeals	12 months and thereafter, unless sooner rescinded or varied
<i>Appeal against Decision</i>	To Court of Arbitration against decision of Boards	To the Court of Industrial Appeals	To Court of Industrial Arbitration against decision of Boards. Case may be stated for opinion of Full Bench
<i>Can Preference to Unionists be declared?</i>	Yes	No	Yes
<i>Provision against Strikes and Lock-outs</i>	Fourteen days' notice of intention must be given. Secret ballot, two-thirds of members must vote. Penalty for illegal strike, £500; for lock-out, £1,000	Determination may be suspended by Governor-in-Council for any period not exceeding 12 months	Provision made for taking ballot: majority must vote in favour of strike or lock-out. Penalties for strikes or lock-outs, employer or industrial union, £100; other cases, £10
<i>Special Provisions for Conciliation</i>	Special Commissioner. Conciliation Committees for colliery and other districts. Registered agreements	None	Compulsory Conference. Registered agreements

WAGES AND CONDITIONS OF EMPLOYMENT, 1922—*continued*.

South Australia.	Western Australia.	Tasmania.	Commonwealth.
Court—Present President appointed by Act. On vacancy occurring, Governor to appoint person eligible for appointment as a Judge of Supreme Court. Industrial Boards—Appointed by Minister on nomination of Board, or failing such nomination, on selection by Board of Industry. Board of Industry—President or Deputy-President of the Industrial Court	A Judge of the Supreme Court appointed by Governor	Appointed by the Governor	President appointed by Governor-General from Justices of High Court for a term of 7 years
Court—Constituted by President or a Deputy-President, or any 2 or more of them together. Industrial Boards—Chairman and 4, 6, or 8 other members. Board of Industry—President and 4 Commissioners	Three, including President	Chairman, and as many representative members as the Minister declares	President. Provision is made for appointment of Deputy-Presidents
Court—Deputy Presidents by Governor. Industrial Boards—By Minister on nomination of employers and employees respectively, failing that on selection of President. Board of Industry—Appointed by Governor	Appointed by Governor, one each on recommendation of unions of employers and workers respectively	By Minister on nomination by employers and employees. Selected by Minister if less or more than required nominations	Deputy-Presidents appointed by Governor-General from Justices of High Court or Judges of Supreme Court of a State, or from barristers or solicitors of the High Court or of the Supreme Court of a State, of not less than 5 years' standing
By Factories Department before Special Magistrate or Justices. Appeal to Industrial Court	By Arbitration Court on complaint of any party to the award, or Registrar or an Industrial Inspector	By Chief Inspector under Factories Act with consent of the Minister	By proceedings instituted by Registrar, or by any organization affected, or a member thereof
Court—Period specified, but not more than 3 years, and thereafter until new award or order made. Industrial Boards—Period specified, not exceeding 3 years, unless previously cancelled by Minister or varied or rescinded by Board or Court	For period fixed by Court, not exceeding 3 years, or for 1 year and thenceforward from year to year until 30 days' notice given	For 2 years, and thereafter until new determination made	For period fixed by award not exceeding 5 years, and thereafter, unless the Court otherwise orders, until a new award has been made
To Industrial Court	No appeal except against imprisonment or a fine exceeding £20	To Supreme Court against validity of determination only	No appeal. Case may be stated by President for opinion of High Court
No	No	No	Yes; ordinarily optional, but mandatory if in opinion of Court preference is necessary for maintenance of industrial peace or welfare of society
Penalty £500, or imprisonment for 3 months	Employer or Industrial Union, £100; other cases, £10	Organizations,, £500; individuals, £20	Penalty, £1,000
Compulsory Conference. Registered agreements	Special Commissioner. Compulsory conference. Registered agreements	None	Compulsory Conference. Court may temporarily refer to Conciliation Committee. Registered agreements

§ 4. Operations under Wages Board and Industrial Arbitration Acts.

1. General.—Particulars regarding operations under the Commonwealth Arbitration Acts and the various State Acts for the regulation of wages, hours, and conditions of labour, showing the number of boards authorized and constituted, also those which had and which had not made any award or determination in each State; the number and territorial scope of awards or determinations, and the number of industrial agreements in force, were first compiled to the 31st December, 1913.

These particulars have from time to time been revised, and reviews to the end of approximately quarterly periods have been published in the periodical Labour Bulletins and Quarterly Summaries to the 31st December, 1922.

2. Awards, Determinations, Industrial Agreements.—The following tabular statement gives particulars of the operations in each State and under the Commonwealth Statutes during each quarter of the years 1921 and 1922 respectively :—

AWARDS, DETERMINATIONS, AND INDUSTRIAL AGREEMENTS, 1921 AND 1922.

State and Commonwealth.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Full Year.	
	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.	Awards or Determinations made.	Agreements Filed.
1921.										
New South Wales	16	12	24	6	19	14	40	8	99	40
Victoria ..	27	..	49	..	18	..	12	..	106	..
Queensland ..	25	3	28	5	20	8	3	..	76	16
South Australia	5	3	8	..	27	2	30	23	70	28
Western Australia	..	13	2	11	2	9	3	7	7	40
Tasmania ..	1	..	10	..	5	3	4	..	20	3
Commonwealth	3	26	21	14	1	258	9	17	34	315
Com. Pub. Ser. Arbitrator ..	..	..	1	..	2	..	7	..	10	..
Total ..	77	57	143	36	94	294	108	55	422	442

1922.										
New South Wales	9	10	11	4	26	8	23	14	69	36
Victoria ..	6	..	13	..	10	..	7	..	36	..
Queensland ..	37	1	19	7	13	5	2	2	71	15
South Australia	17	1	9	1	8	2	6	1	40	5
Western Australia	..	3	10	2	..	2	6	3	16	10
Tasmania ..	7	..	3	1	2	2	3	..	15	3
Commonwealth	7	10	5	3	1	2	29	19	42	34
Com. Pub. Ser. Arbitrator ..	1	..	4	..	1	..	..	..	6	..
Total ..	84	25	74	18	61	21	76	39	295	103

During 1922 the total number of awards (295) made by industrial tribunals was much less than in 1921, when 422 awards were made. This feature was common to all tribunals with two exceptions—the Western Australian Court of Arbitration and the Commonwealth Court of Conciliation and Arbitration, which were responsible for more awards in 1922 than in 1921. There was a marked diminution also in the number of industrial agreements filed. This feature was common to all States. The greatest falling off was in the number of agreements filed with the Commonwealth Court (34) compared with 315 in the previous year.

3. Boards Authorized, Awards, etc., in Force.—(i) *Totals for Australia.* In the following table particulars are given for all States, excepting Western Australia, in which State no Boards are in existence, of the number of Boards authorized and constituted, and including operations under the Commonwealth and the Western Australian Arbitration Acts, of the number of awards, determinations, and industrial agreements in force in all States at the 31st December, 1913, and at the 30th June, and 31st December, 1921 and 1922 :—

BOARDS AUTHORIZED, ETC., AWARDS, ETC.—AUSTRALIA, 1913, 1921, AND 1922.

Dates.	Boards Autho- rized.	Boards Con- stituted.	Boards which had made Awards or Deter- minations.	Awards or Deter- minations in Force.(a)	Industrial Agree- ments in Force.
31st December, 1913	505	501	387(b)	575(c)	401
30th June, 1921	535	475	411	1,067	957
31st December, 1921	569	557	479	1,047	1,222
30th June, 1922	572	561	499	1,050	859
31st December, 1922	569	561	508	1,042	780

(a) Including awards made by Arbitration Courts and the Commonwealth Public Service Arbitrator
(b) Owing to a number of awards made under the New South Wales Industrial Disputes Act (1908) being still in force, the Boards constituted for such industries under the Industrial Arbitration Act (1912) had not made any awards. (c) Excluding awards or determinations which expired in New South Wales (under the Act of 1908) on 31st December, 1913.

Considerable expansion of the principle of the fixation of a legal minimum rate of wage and of working conditions took place during the nine years ending 31st December, 1922. At the end of 1922, 467 additional awards or determinations were in force in the Commonwealth. The number of industrial agreements* made and in force under the various Acts increased during the nine years under review by 379.

* The registration of industrial agreements is not provided for under the Act in force in Victoria, but such agreements may be registered and filed under the provisions of the Commonwealth Conciliation and Arbitration Act.

(ii) *Summary for States, 1913 to 1922.* In the following table particulars are given for each State and the Commonwealth of the number of Boards authorized, etc., at the 31st December of the years 1913; 1921, and 1922 :—

BOARDS AUTHORIZED, AWARDS, ETC.—SUMMARY, 1913, 1921, AND 1922.

Particulars.	At 31st Dec.	Commonwealth.		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
		Court.	Pub. Ser. Arb.							
<i>Boards Authorized, etc. (a)—</i>										
Boards authorized ..	1913	..	..	(b) 216	135	75	56	..	23	505
	1921	..	..	273	170	..	76	..	50	569
	1922	..	..	272	174	..	76	..	47	569
Boards constituted ..	1913	..	..	(b) 223	132	74	51	..	21	501
	1921	..	..	273	168	..	76	..	40	557
	1922	..	..	272	172	..	76	..	41	561
Boards which have made Awards or Determinations ..	1913	..	..	123	123	74	47	..	19	386
	1921	..	..	254	157	..	51	..	(d) 17	479
	1922	..	..	256	161	..	66	..	25	508
<i>Awards and Determinations—</i>										
Awards and Determinations in force ..	1913	17	..	(c) 265	127	73	54	18	21	575
	1921	99	22	314	161	208	111	84	48	1,047
	1922	104	27	331	166	208	81	77	48	1,042
<i>State Awards and Determinations—</i>										
Applying to Whole State	1913	..	..	32	8	3	..	..	15	58
	1921	..	..	38	37	57	3	5	41	181
	1922	..	..	46	42	63	9	4	41	205
Applying to Metropolitan area ..	1913	..	..	58	..	28	53	13	1	153
	1921	..	..	85	1	54	81	56	..	277
	1922	..	..	85	1	47	53	50	..	236
Applying to Metropolitan and Country areas ..	1913	..	..	49	105	1	..	1	5	161
	1921	..	..	128	112	35	5	3	5	288
	1922	..	..	134	113	41	2	..	5	295
Applying to Country areas ..	1913	..	..	126	14	41	1	4	..	186
	1921	..	..	63	11	62	22	20	2	180
	1922	..	..	66	10	57	17	23	2	175
<i>Commonwealth Court Awards</i>										
Awards in force in each State ..	1913	..	..	13	17	15	16	9	13	..
	1921	..	..	58	67	33	59	34	50	..
	1922	..	..	55	71	25	57	34	41	..
<i>C'wealth Public Service Arbitrator—</i>										
Determinations in force in each State ..	1921	..	..	21	20	20	21	21	19	..
<i>Industrial Agreements—</i>										
In force ..	1913	228	..	75	..	5	11	82	..	401
	1921	922	..	108	..	44	39	106	3	1,222
	1922	516	..	105	..	47	42	66	4	780
C'wealth Agreements in force in each State ..	1913	..	..	132	129	68	62	57	61	..
	1921	..	..	208	504	61	103	70	118	..
	1922	..	..	89	308	32	64	49	30	..
Number of Persons working under State Awards and Determinations (estimated) ..	1922	..	..	275,000	171,000	100,000	27,000	35,000	15,000	623,000

(a) The figures for New South Wales are exclusive of Demarcation Boards. (b) Including boards which were subsequently dissolved, owing to alteration in the sectional arrangement of industries and callings. (c) Omitting a number of awards which expired on the 31st December, 1913. (d) All Wages Boards constituted under the Wages Boards Act 1910, as amended, were abolished on the 19th January, 1921, by the Wages Board Act 1920. The particulars given relate to Boards appointed under the latter Act.

§ 5. Fluctuations in Employment.

1. *General.*—The particulars given in the following tables are based upon information furnished by the secretaries of trade unions in the several States. The membership of unions regularly reporting has now reached nearly 400,000. Unemployment particulars

are not collected from those unions whose members have permanency of employment, such as railway and tramway employees, and public servants, or from unions whose members are casually employed (wharf labourers, etc.). Very few of the unions pay unemployment benefit, but the majority of the larger organizations have permanent secretaries and organizers who are closely in touch with the members and with the state of trade within their particular industries. In many cases unemployment registers are kept, and provision is also made in the rules for members out of work to pay reduced subscriptions. Taking these facts, and also the large membership of the numerous unions from which regular quarterly returns are being received, into consideration, it will be realized that percentage unemployment results based on trade union information may be taken to show the general trend of unemployment existing in the several States. The tables do not furnish a complete register of unemployment, but for the purpose of making comparisons and showing tendencies over a period of years, the percentages returned as unemployed, though not exact, are the most satisfactory available. It may be mentioned that, in order to overcome the difficulties in regard to seasonal fluctuations, returns as to numbers unemployed have been collected from trade unions for each quarter since the beginning of the year 1913, the figures for years shown representing the average for the four quarters.

2. Unemployment.—(i) *In each State, 1922.* Any deductions which may be drawn from the data collected as to the relative degree of unemployment in the several States are subject to certain qualifications (in addition to those already stated above) inasmuch as the industries included in the trade union returns are not uniform for each State. In comparing the results for the individual States, it must therefore be borne in mind that, to some extent at least, comparisons are being drawn between different industries and not only between different States. Nevertheless, since the industrial occupations of the people vary considerably in the several States, all comparisons between the States based on comprehensive data as to unemployment must, to some extent, suffer from the defect indicated.

UNEMPLOYMENT IN STATES, 1922.

State.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
New South Wales	125	170,728	19,496	11.4
Victoria	96	117,495	7,802	6.6
Queensland	53	33,189	3,320	10.0
South Australia	60	28,633	1,631	5.7
Western Australia	71	22,923	2,280	9.9
Tasmania	40	7,977	690	8.6
Australia	445	380,945	35,219	9.2

(ii) *Summary for Australia, 1918 to 1922.* The following table shows for each of the years specified :—(a) The number of unions for which returns as to unemployment are available ; (b) the number of members of such unions ; (c) the number of members unemployed, and (d) the percentage of members unemployed on the total number of members of those unions for which returns are available.

UNEMPLOYMENT.—AUSTRALIA, 1918 TO 1922.

Particulars.	Unions.	Membership.	Unemployed.	
			Number.	Percentage.
1918	478	299,793	17,536	5.8
1919	464	310,145	20,507	6.6
1920	447	341,967	22,105	6.5
1921	449	361,744	40,549	11.2
1922	445	380,945	35,219	9.2
1922, 1st Quarter ..	442	378,340	34,800	9.2
2nd „ ..	448	373,757	35,796	9.6
3rd „ ..	443	381,380	36,706	9.6
4th „ ..	445	390,304	33,570	8.6

NOTE.—Similar figures for each of the four quarters of the years since 1912 will be found in the Labour Reports. The quarterly figures show the number of persons who were out of work for three days or more during a specified week in each quarter, and the annual figures the average of the four quarters; they do not include persons out of work through strikes or lockouts.

During 1921 a substantial increase occurred in the number unemployed, the highest percentage yet recorded (12.5) being reached in the second quarter of the year.

(iii) *In Industrial Groups.* The following table shows the percentages unemployed in several of the fourteen industrial groups. It may be observed that for those industries in which employment is either unusually stable or, on the other hand, exceptionally casual, information as to unemployment cannot ordinarily be obtained from trade unions. Hence, certain industries such as railways, shipping, agricultural, pastoral, etc., and domestic, hotels, etc., are insufficiently represented in the returns. Particulars are not, therefore, shown separately for these groups, such returns as are available being included in the last group, "Other and Miscellaneous."

UNEMPLOYMENT IN INDUSTRIAL GROUPS.—AUSTRALIA, 1922.

Industrial Group.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
I. Wood, Furniture, etc. ..	18	21,506	1,561	7.3
II. Engineering, Metal Works, etc. ..	63	52,786	8,552	16.2
III. Food, Drink, Tobacco, etc. ..	55	40,630	4,455	11.0
IV. Clothing, Hats, Boots, etc. ..	22	40,650	868	2.1
V. Books, Printing, etc. ..	17	14,116	295	2.1
VI. Other Manufacturing ..	75	33,329	3,506	10.5
VII. Building	49	40,848	1,698	4.2
VIII. Mining, Quarrying, etc. ..	21	27,287	3,712	13.6
X. Other Land Transport ..	13	10,536	449	4.3
IX., XI., XII., XIII., and XIV., Other and Miscellaneous ..	112	99,257	10,123	10.2
All Groups	445	380,945	35,219	9.2

§ 6. Rates of Wage and Hours of Labour.

1. *General.*—The collection of material respecting the current rates of wage payable in different callings and in occupations in various industries was first undertaken by the Commonwealth Bureau of Census and Statistics in the early part of the year 1913. The particulars acquired were obtained primarily from awards, determinations and agreements, under Commonwealth and State Acts, and therefore show the minimum rates prescribed. They refer generally to the capital city in each State, but in industries which obviously

are not carried on in the capital cities, *e.g.*, mining, agriculture, etc., the rates in the more important centres have been taken. In cases where no award, determination, or agreement is in force, particulars are given, where possible, of the ruling union or predominant rate as furnished by employers or secretaries of trade unions. The total number of occupations for which particulars of wages are available back to 1901 is 952. Since 1913, when the scope of the inquiry was extended to 930 specified industries and 4,256 adult occupations (3,948 male and 308 female), the number of occupations included in the comparative computations has been kept constant.

The index-numbers for male adult workers are computed with the weighted average wage in 1911 as base (=1,000). This has been done in order that comparisons may be made between these index-numbers and the retail prices index-numbers which are also computed to the year 1911 as base. In the case of females, however, it has not been possible to secure information for years prior to 1914. For that reason the index-numbers are computed with the weighted average rate of wage payable to adult female workers in Australia at 30th April, 1914, as base (=1,000).

An extensive tabular presentation of the minimum rates of wage for adult male and female workers in the main occupations in the capital city of each State will be found in Labour Report No. 13, Appendices IV. and V. Space will not permit of the inclusion of the detailed tables in this volume.

2. Weekly Rates of Wage, 1918 to 1922.—(i) *General.* The arithmetical average of the rates of wage given in the Appendices referred to furnishes the basis for the computation of relative weighted wages in the different States and industrial groups.

(ii) *Adult Males—Each State.* Particulars are given in the following table of the results thus obtained of the weighted average nominal weekly rates of wage payable to adult male workers at the 31st December in the years 1918 to 1922 for a full week's work in each State and Australia, together with index-numbers computed with the average for Australia for the year 1911 as base (=1,000).

WAGES.—ADULT MALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE PAYABLE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS, 31st DECEMBER, 1918, TO 1922.

NOTE.—Index-numbers based on the average wage for Australia in 1911 (51s. 3d.) as base (=1,000). The index-numbers in this table are comparable throughout.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia. (a)
No. of Occupations Included ..	874	909	627	567	489	482	3,948

RATES OF WAGE.

	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
31st December, 1918 ..	65	11	65	6	69	6	65	6	70	4	61	2	66	5
31st December, 1919 ..	76	9	72	0	78	7	70	5	77	8	69	0	74	11
31st December, 1920 ..	94	0	86	1	91	6	82	8	89	9	85	9	89	10
31st December, 1921 ..	95	10	93	7	96	8	89	5	95	0	91	8	94	6
31st March, 1922 ..	95	7	93	2	94	9	89	5	94	9	90	9	94	0
30th June, 1922 ..	93	8	91	5	94	0	87	5	93	6	88	7	92	4
30th September, 1922 ..	91	10	91	0	93	10	87	6	93	9	88	8	91	6
31st December, 1922 ..	91	6	91	4	93	10	87	6	93	9	88	5	91	6

INDEX-NUMBERS.

	1,286	1,278	1,356	1,278	1,372	1,193	1,296
31st December, 1918 ..	1,286	1,278	1,356	1,278	1,372	1,193	1,296
31st December, 1919 ..	1,498	1,404	1,534	1,373	1,516	1,346	1,462
31st December, 1920 ..	1,835	1,679	1,785	1,613	1,751	1,674	1,752
31st December, 1921 ..	1,860	1,826	1,886	1,745	1,853	1,788	1,844
31st March, 1922 ..	1,865	1,818	1,848	1,744	1,849	1,771	1,834
30th June, 1922 ..	1,828	1,784	1,835	1,706	1,824	1,728	1,801
30th September, 1922 ..	1,792	1,777	1,831	1,707	1,831	1,730	1,786
31st December, 1922 ..	1,785	1,783	1,830	1,708	1,829	1,726	1,785

(a) Weighted average.

The results show that at the 31st December, 1922, the weighted average nominal weekly rate of wage was highest in Queensland, followed in the order named by Western Australia, New South Wales, Victoria, Tasmania, and South Australia. In all States wages increased rapidly from December, 1918, to the end of 1921. During 1922, however, the average wage in each State declined on account of adjustments made in accordance with the decrease in the cost of living. The largest percentage increase during the period under review was in Tasmania with 44.7 per cent., followed by Victoria 39.5 per cent., New South Wales 38.8 per cent., Queensland 35.0 per cent., South Australia 33.6 per cent., and Western Australia 33.3 per cent. The increase in the weighted average for Australia was 37.7 per cent.

(iii) *Adult Males—Industrial Groups.* The following table shows (a) the average weekly rate of wage in each of the fourteen industrial groups, (b) the weighted average wage for all groups combined, and (c) index-numbers based on the average wage for all groups in 1911 (51s. 3d.) as base (=1,000) :—

WAGES.—ADULT MALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1918 TO 1922.

NOTE.—Index-numbers for each industrial group and all industrial groups, based on the average wage for all groups in 1911 (51s. 3d.), as base (=1,000). The index-numbers in this table are comparable throughout.

		Weighted Average Nominal Weekly Rate of Wage, and Index-Number at—							
Industrial Group.		31st Dec., 1918.	31st Dec., 1919.	31st Dec., 1920.	31st Dec., 1921.	31st March, 1922.	30th June, 1922.	30th Sept., 1922.	31st Dec., 1922.
I. Wood, Furniture, etc.	{ Wage ..	68.11	75.9	95.1	98.2	97.5	96.7	95.5	95.4
	{ Index-No.	1,345	1,479	1,855	1,916	1,901	1,884	1,861	1,860
II. Engineering, etc.	{ Wage ..	68.8	77.6	92.5	98.2	98.0	95.6	94.0	93.10
	{ Index-No.	1,340	1,512	1,803	1,915	1,911	1,863	1,834	1,832
III. Food, Drink, etc.	{ Wage ..	66.0	75.6	89.3	93.10	93.9	92.10	91.9	91.10
	{ Index-No.	1,288	1,473	1,742	1,832	1,829	1,812	1,791	1,792
IV. Clothing, Boots, etc.	{ Wage ..	61.5	73.5	86.5	93.3	92.6	92.6	91.5	91.1
	{ Index-No.	1,198	1,433	1,687	1,819	1,805	1,805	1,784	1,777
V. Books, Printing, etc.	{ Wage ..	74.1	80.9	99.6	104.7	104.0	103.7	102.9	102.9
	{ Index-No.	1,446	1,576	1,941	2,040	2,029	2,022	2,004	2,004
VI. Other Manu- facturing	{ Wage ..	66.1	75.4	88.11	95.0	93.8	92.5	91.8	91.11
	{ Index-No.	1,289	1,470	1,736	1,854	1,827	1,804	1,788	1,793
VII. Building	{ Wage ..	74.3	79.8	95.7	102.5	102.4	102.2	101.4	100.5
	{ Index-No.	1,449	1,554	1,865	1,999	1,997	1,994	1,977	1,960
VIII. Mining, etc.	{ Wage ..	78.6	88.4	103.10	105.4	104.9	103.7	103.8	103.8
	{ Index-No.	1,532	1,724	2,026	2,056	2,043	2,021	2,023	2,022
IX. Railways, etc.	{ Wage ..	68.11	78.6	93.1	97.5	95.11	95.10	93.5	93.4
	{ Index-No.	1,345	1,532	1,816	1,901	1,871	1,869	1,823	1,821
X. Other Land Transport	{ Wage ..	63.5	73.4	87.3	90.2	89.8	89.7	88.4	88.5
	{ Index-No.	1,237	1,431	1,702	1,760	1,749	1,748	1,724	1,725
XI. Shipping, etc. (a)	{ Wage ..	64.5	77.9	88.0	101.8	100.6	99.9	99.6	99.9
	{ Index-No.	1,257	1,518	1,716	1,984	1,961	1,946	1,941	1,947
XII. Agricultural, etc. (b)	{ Wage ..	63.1	70.3	87.1	89.0	89.1	83.11	83.11	83.11
	{ Index-No.	1,231	1,370	1,699	1,736	1,739	1,638	1,638	1,637
XIII. Domestic, etc. (c)	{ Wage ..	56.7	68.7	80.6	84.2	83.6	83.5	82.1	82.4
	{ Index-No.	1,104	1,338	1,571	1,642	1,628	1,628	1,601	1,606
XIV. Miscellaneous	{ Wage ..	63.3	71.3	84.11	91.1	90.4	89.8	88.7	88.8
	{ Index-No.	1,234	1,389	1,656	1,778	1,763	1,750	1,729	1,730
All Industrial Groups (d)	{ Wage ..	66.5	74.11	89.10	94.6	94.0	92.4	91.6	91.6
	{ Index-No.	1,296	1,462	1,752	1,844	1,834	1,801	1,786	1,785

(a) Including the value of victualling and accommodation where supplied. (b) Including the value of board and lodging where supplied. (c) Including the value of board and lodging where supplied as follows:—In Sydney, 10s. 2d. to 21s. 6d. (according to class of establishment); in Melbourne 20s. and 23s.; in Brisbane, 14s. and 16s.; in Adelaide, 22s. (Restaurants), and 25s. (Hotels and Clubs) in Perth, 24s. 6d.; and in Hobart, 22s. per week. (d) Weighted average.

The foregoing table shows that the rate of increase in the weighted average weekly wage in occupations and callings classified in the fourteen industrial groups during the period 31st December, 1918 to 1922, was greatest in Group XI. (Shipping), 54.9 per cent.,

followed in the order named by Groups IV. (Clothing, Boots, etc.), 48.3 per cent., XIII. (Domestic, etc.), 45.5 per cent., and XIV. (Miscellaneous), 40.2 per cent. The smallest increase occurred in Group VIII. (Mining), 32.0 per cent. In nine of the groups the increase was less, and in five groups more than the increase in the weighted average for all groups. During 1922 decreases in average wages occurred in all industrial groups, the greatest being 5.7 per cent. in Group XII. (Agricultural, etc.), followed by Groups II. (Engineering, etc.), 4.4 per cent.; IX. (Railways, etc.), 4.2 per cent.; VI. (Other Manufacturing), 3.3 per cent. The percentage reduction during the year was least in Group VIII. (Mining), 1.7 per cent.

(iv) *Adult Females—Each State.* The following table shows the weighted average weekly rate of wage payable to adult female workers for a full week's work in each State and Australia at the dates specified. Index-numbers are given also for each State based on the average weekly wage at the end of each of the periods indicated, computed with the weighted average wage for all States at the 30th April, 1914 as base (=1,000).

WAGES.—ADULT FEMALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE PAYABLE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS, 31st DECEMBER, 1918 TO 1922.

NOTE.—Index-numbers based on the average wage for Australia at the 30th April, 1914 (27s. 2d.) as base (=1,000). The index-numbers in this table are comparable throughout.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.(a)
No. of Occupations Included ..	85	87	37	47	24	28	308

RATES OF WAGE.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
31st December, 1918 ..	31 10	31 3	32 10	29 5	38 10	28 9	31 9
31st December, 1919 ..	40 0	34 5	38 4	33 3	43 7	33 0	37 1
31st December, 1920 ..	46 0	43 1	44 11	40 7	52 11	41 10	44 6
31st December, 1921 ..	49 0	47 10	50 3	45 2	56 4	47 6	48 8
31st March, 1922 ..	48 4	47 10	48 2	44 6	56 4	47 6	48 2
30th June, 1922 ..	48 4	47 10	48 2	44 6	56 4	47 6	48 1
30th September, 1922 ..	48 2	47 8	48 2	44 6	56 4	47 6	48 0
31st December, 1922 ..	47 8	48 0	48 2	44 0	56 4	47 7	47 11

INDEX-NUMBERS.

31st December, 1918 ..	1,173	1,151	1,208	1,084	1,430	1,059	1,168
31st December, 1919 ..	1,474	1,268	1,412	1,225	1,605	1,215	1,365
31st December, 1920 ..	1,695	1,586	1,652	1,495	1,947	1,540	1,637
31st December, 1921 ..	1,803	1,761	1,849	1,661	2,074	1,749	1,790
31st March, 1922 ..	1,780	1,762	1,772	1,639	2,072	1,749	1,771
30th June, 1922 ..	1,778	1,760	1,771	1,639	2,073	1,749	1,770
30th September, 1922 ..	1,773	1,756	1,771	1,639	2,073	1,749	1,766
31st December, 1922 ..	1,754	1,767	1,771	1,620	2,075	1,751	1,763

(a) Weighted Average.

As in the case of male occupations, female wages increased rapidly up to December, 1921, but in 1922 reductions were recorded. The decrease over the whole of Australia was relatively much less than in the case of males. The Australian average, which at the 31st December, 1918, was 31s. 9d. and at the 31st December, 1921, 48s. 8d., fell during the year 1922 to 47s. 11d., a decrease of 9d. per week, although in the States of Victoria and Tasmania slight increases were recorded. The largest reduction, 2s. 1d. per week, occurred in Queensland, followed by New South Wales with 1s. 4d. per week. The Western Australian average remained stationary during the period. The advance in the Australian average during the period was 50.9 per cent.

(v) *Adult Females—Industrial Groups.* The following table gives particulars of the weighted average weekly rate of wage payable to adult female workers in the industrial groups in which they are mainly employed, and in all groups combined. Taking the average wage for all groups at the 30th April, 1914, as base (=1,000), index-numbers are given, computed on the average rate of wage ruling at the end of each period indicated.

WAGES.—ADULT FEMALES—WEIGHTED AVERAGE NOMINAL WEEKLY RATE PAYABLE FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 31st DECEMBER, 1918, TO 1922.

NOTE.—Index-numbers for each Industrial Group and all Industrial Groups, based on the average wage for all groups at 30th April, 1914 (27s. 2d.), as base (=1,000). The index-numbers in this table are comparable throughout.

Date.	Industrial Group.					
	III. Food, Drink, etc.	IV. Clothing, Boots, etc.	I., II., V. and VI., All Other Manufacturing.	XIII. Domestic, Hotels, etc. (a).	XIV. Miscel- laneous.	All Groups (b).
RATES OF WAGE.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
31st December, 1918 ..	29 3	30 9	32 0	34 1	32 4	31 9
31st December, 1919 ..	34 8	37 4	36 9	38 2	36 2	37 1
31st December, 1920 ..	41 10	43 5	44 0	46 3	46 2	44 6
31st December, 1921 ..	43 9	48 7	48 0	48 6	50 0	48 8
31st March, 1922 ..	43 10	48 1	47 9	48 2	49 2	48 2
30th June, 1922 ..	43 10	48 1	47 5	48 1	49 2	48 1
30th September, 1922..	43 5	48 0	47 6	47 10	49 2	48 0
31st December, 1922 ..	43 3	47 10	47 4	48 3	48 9	47 11
INDEX-NUMBERS.						
31st December, 1918 ..	1,078	1,131	1,178	1,255	1,189	1,168
31st December, 1919 ..	1,277	1,373	1,353	1,403	1,332	1,365
31st December, 1920 ..	1,538	1,597	1,619	1,701	1,700	1,637
31st December, 1921 ..	1,609	1,789	1,766	1,787	1,841	1,790
31st March, 1922 ..	1,615	1,770	1,757	1,772	1,810	1,771
30th June, 1922 ..	1,612	1,770	1,746	1,770	1,810	1,770
30th September, 1922..	1,599	1,767	1,748	1,760	1,810	1,766
31st December, 1922 ..	1,593	1,762	1,741	1,777	1,794	1,763

(a) See footnote (c) to table on page 578. (b) Weighted Average.

The greatest increase in the weekly rate of wage occurred in Group IV. (Clothing, Boots, etc.), 55.8 per cent., followed in the order named by Groups XIV. (Miscellaneous), 50.9 per cent.; I., II., V., and VI. (All Other Manufacturing), and III. (Food, Drink, etc.), 47.8 per cent.; and XIII. (Domestic, Hotels, etc.), 41.6 per cent. The weighted average weekly rate of wage for all groups was 50.9 per cent. higher at the end of 1922 than at the 31st December, 1918.

The average wage for females in each industrial group declined during the year 1922, the largest decrease being 2.6 per cent. in Group XIV., followed in the order named by Groups IV., 1.5 per cent., I., II., V. and VI., 1.4 per cent., III., 1.0 per cent., and XIII. 0.6 per cent. The weighted average for all groups decreased by 1.5 per cent.

3. Relative Hours of Labour and Hourly Rates of Wage, 1918 to 1922.—(i) General. The rates of wage referred to in preceding paragraphs relate to the minimum rates payable for a full week's work. It should be observed, however, that the number of hours which constitutes a full week's work differs in many instances, not only as between various trades and occupations in each individual State, but also as between the same trades and occupations in the several States. In order to secure what may be for some purposes a more adequate standard of comparison, it is desirable to reduce the comparison to a

common basis, viz., the rate of wage per hour. Particulars are given in the following table classified according to States, for male and female occupations separately, at the end of the years 1918 to 1922. These particulars relate to (a) the weighted average nominal weekly wage, (b) the weighted average number of working hours constituting a full week's work, and (c) the weighted average hourly wage. It should be observed that the weighted average weekly wage relates to all industrial groups combined, and includes the value of board and lodging, where supplied, in land occupations, and the value of victualling in marine occupations*; whereas the number of working hours and the hourly wage relate to all industrial groups other than Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.). Owing to the fact that many of the occupations included in these two groups are of a casual or seasonal nature, and that the hours of labour in these occupations are not generally regulated either by awards or determinations of industrial tribunals or otherwise, the necessary data for the computation of the average number of working hours are not available.

The general effect of reducing the rates of wage to a common basis (*i.e.*, per hour) is to eliminate on comparison any apparent difference between the several States which may be due to unequal working time.

(ii) *Adult Males and Females.* Particulars for the last five years for adult males and females are given in the table hereunder:—

WEEKLY AND HOURLY WAGES AND HOURS OF LABOUR.—ADULT WORKERS,
1918 TO 1922.

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus.
MALE WORKERS.								
31st Dec., 1918	Weekly Wage (a)	s. d. 65 11	s. d. 65 6	s. d. 69 6	s. d. 65 6	s. d. 70 4	s. d. 61 2	s. d. 66 5
	Working Hours (b)	.. 48.16	.. 47.98	.. 46.90	.. 47.77	.. 47.69	.. 48.39	.. 47.88
	Hourly Wage (b)	.. 1/4½	.. 1/4½	.. 1/6	.. 1/4½	.. 1/6	.. 1/3½	.. 1/5
31st Dec., 1919	Weekly Wage (a)	s. d. 76 9	s. d. 72 0	s. d. 78 7	s. d. 70 5	s. d. 77 8	s. d. 69 0	s. d. 74 11
	Working Hours (b)	.. 47.77	.. 47.36	.. 46.19	.. 47.58	.. 47.60	.. 47.89	.. 47.41
	Hourly Wage (b)	.. 1/7½	.. 1/6½	.. 1/9	.. 1/5½	.. 1/7½	.. 1/5½	.. 1/7½
31st Dec. 1920	Weekly Wage (a)	s. d. 94 0	s. d. 86 1	s. d. 91 6	s. d. 82 8	s. d. 89 9	s. d. 85 9	s. d. 89 10
	Working Hours (b)	.. 47.51	.. 47.19	.. 45.63	.. 47.29	.. 46.53	.. 47.33	.. 47.07
	Hourly Wage (b)	.. 2/-	.. 1/10	.. 2/0½	.. 1/8½	.. 1/11½	.. 1/10	.. 1/11
31st Dec., 1921	Weekly Wage (a)	s. d. 95 10	s. d. 93 7	s. d. 96 8	s. d. 89 5	s. d. 95 0	s. d. 91 8	s. d. 94 6
	Working Hours (b)	.. 45.66	.. 46.95	.. 45.52	.. 47.07	.. 46.24	.. 46.84	.. 46.22
	Hourly Wage (b)	.. 2/1½	.. 2/0½	.. 2/2	.. 1/10½	.. 2/1	.. 1/11½	.. 2/0½
31st Dec., 1922	Weekly Wage (a)	s. d. 91 6	s. d. 91 4	s. d. 93 10	s. d. 87 6	s. d. 93 9	s. d. 88 5	s. d. 91 6
	Working Hours (b)	.. 46.05	.. 46.99	.. 45.51	.. 47.00	.. 46.41	.. 46.93	.. 46.38
	Hourly Wage (b)	.. 2/0½	.. 1/11½	.. 2/1½	.. 1/10½	.. 2/0½	.. 1/10½	.. 2/-
FEMALE WORKERS.								
31st Dec., 1918	Weekly Wage	s. d. 31 10	s. d. 31 3	s. d. 32 10	s. d. 29 5	s. d. 38 10	s. d. 28 9	s. d. 31 9
	Working Hours	.. 48.35	.. 48.32	.. 48.37	.. 48.73	.. 48.78	.. 49.83	.. 48.42
	Hourly Wage	.. -/8	.. -/7½	.. -/8½	.. -/7½	.. -/9½	.. -/7	.. -/7½
31st Dec., 1919	Weekly Wage	s. d. 40 0	s. d. 34 5	s. d. 38 4	s. d. 33 3	s. d. 43 7	s. d. 33 0	s. d. 37 1
	Working Hours	.. 47.53	.. 47.63	.. 46.76	.. 47.67	.. 48.12	.. 49.28	.. 47.54
	Hourly Wage	.. -/10	.. -/8½	.. -/9½	.. -/8½	.. -/11	.. -/8	.. -/9½
31st Dec., 1920	Weekly Wage	s. d. 46 0	s. d. 43 1	s. d. 44 11	s. d. 40 7	s. d. 52 11	s. d. 41 10	s. d. 44 6
	Working Hours	.. 46.83	.. 46.23	.. 46.09	.. 46.51	.. 46.20	.. 47.86	.. 46.47
	Hourly Wage	.. -/11½	.. -/11½	.. -/11½	.. -/10½	.. 1/1½	.. -/10½	.. -/11½
31st Dec., 1921	Weekly Wage	s. d. 49 0	s. d. 47 10	s. d. 50 3	s. d. 45 2	s. d. 56 4	s. d. 47 6	s. d. 48 8
	Working Hours	.. 45.06	.. 46.04	.. 45.66	.. 46.10	.. 45.97	.. 47.86	.. 45.69
	Hourly Wage	.. 1/1	.. 1/0½	.. 1/1½	.. -/11½	.. 1/2½	.. 1/-	.. 1/0½
31st Dec., 1922	Weekly Wage	s. d. 47 8	s. d. 48 0	s. d. 48 2	s. d. 44 0	s. d. 56 4	s. d. 47 7	s. d. 47 11
	Working Hours	.. 45.33	.. 46.14	.. 45.60	.. 46.10	.. 45.97	.. 47.86	.. 45.82
	Hourly Wage	.. 1/0½	.. 1/0½	.. 1/0½	.. -/11½	.. 1/2½	.. 1/-	.. 1/0½

(a) Weighted average weekly rate in all industrial groups combined. (b) Weighted average working hours per week, and computed hourly rates of wage for all industrial groups excepting Groups XI. (Shipping, etc), and XII. (Agricultural, Pastoral, etc.). Working hours have not been generally regulated by industrial tribunals for occupations classified in industrial groups XI. and XII.

(iii) *Index-numbers.* There has been a diminution in each of the States during the period 1918 to 1921 in the number of working hours constituting a full week's work for male and female occupations, but during 1922 certain increases in hours were recorded, principally in New South Wales. The effect of these changes on the hourly rate of wage as compared with the general increase in the weekly wage is readily seen from the comparative index-numbers given in the following table. In each instance (male and female occupations separately) the basis taken is the weighted average for Australia at the 30th April, 1914 (=1,000)

WEEKLY AND HOURLY WAGE INDEX-NUMBERS.—ADULT WORKERS,
1918 TO 1922.

NOTE.—Weighted average for Australia at 30th April, 1914, as base (=1,000).

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
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MALE WORKERS.

31st Dec., 1918	{ Weekly Wage	..	1,196	1,189	1,261	1,188	1,276	1,110	1,205
	{ Hourly Wage	..	1,196	1,192	1,297	1,176	1,282	1,120	1,210
31st Dec., 1919	{ Weekly Wage	..	1,393	1,306	1,426	1,277	1,409	1,251	1,359
	{ Hourly Wage	..	1,405	1,322	1,512	1,262	1,408	1,259	1,378
31st Dec., 1920	{ Weekly Wage	..	1,706	1,561	1,659	1,500	1,628	1,556	1,629
	{ Hourly Wage	..	1,725	1,570	1,753	1,492	1,686	1,567	1,655
31st Dec., 1921	{ Weekly Wage	..	1,738	1,697	1,753	1,623	1,723	1,663	1,715
	{ Hourly Wage	..	1,817	1,741	1,865	1,637	1,796	1,675	1,779
31st Dec., 1922	{ Weekly Wage	..	1,660	1,657	1,702	1,588	1,701	1,605	1,660
	{ Hourly Wage	..	1,735	1,709	1,803	1,621	1,766	1,628	1,726

FEMALE WORKERS.

31st Dec., 1918	{ Weekly Wage	..	1,173	1,151	1,208	1,084	1,430	1,059	1,168
	{ Hourly Wage	..	1,191	1,169	1,226	1,092	1,426	1,044	1,185
31st Dec., 1919	{ Weekly Wage	..	1,474	1,268	1,412	1,225	1,605	1,215	1,365
	{ Hourly Wage	..	1,523	1,307	1,483	1,262	1,639	1,211	1,410
31st Dec., 1920	{ Weekly Wage	..	1,695	1,586	1,652	1,495	1,947	1,540	1,637
	{ Hourly Wage	..	1,777	1,685	1,761	1,578	2,069	1,580	1,730
31st Dec., 1921	{ Weekly Wage	..	1,803	1,761	1,849	1,661	2,074	1,749	1,790
	{ Hourly Wage	..	1,965	1,878	1,989	1,770	2,215	1,794	1,923
31st Dec., 1922	{ Weekly Wage	..	1,754	1,767	1,771	1,620	2,075	1,751	1,763
	{ Hourly Wage	..	1,899	1,881	1,908	1,726	2,215	1,797	1,889

4. **Weighted Average Nominal Weekly Hours of Labour, Adult Males.**—The following table shows the weighted average nominal hours of labour (exclusive of overtime) in a full working week for male workers in each State and Australia at the 31st December, 1918 to 1922. Index-numbers are given also for each State based on the weekly average hours at the end of each of the periods specified, computed with the weighted average hours of labour for Australia at the 30th April, 1914, as base (=1,000).

HOURS OF LABOUR.—WEEKLY INDEX-NUMBERS, ADULT MALES, 1918 TO 1922.

NOTE.—Index-numbers based on the Average Hours of Labour for Australia at the 30th April, 1914 (48.93) as base (=1,000). The index-numbers in this table are comparable throughout. Overtime is excluded.

Date.	Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Aus- tralia.
31st Dec., 1918	Weighted average weekly hours of labour (a) ..	48.16	47.98	46.90	47.77	47.69	48.39	47.88
	Index-numbers ..	984	981	959	976	975	989	979
31st Dec., 1919	Weighted average weekly hours of labour (a) ..	47.77	47.36	46.19	47.58	47.60	47.89	47.41
	Index-numbers ..	976	968	944	972	973	979	969
31st Dec., 1920	Weighted average weekly hours of labour (a) ..	47.51	47.19	45.63	47.29	46.53	47.33	47.07
	Index-numbers ..	971	964	933	966	951	967	962
31st Dec., 1921	Weighted average weekly hours of labour (a) ..	45.66	46.95	45.52	47.07	46.24	46.84	46.22
	Index-numbers ..	933	960	930	962	945	957	945
31st Dec., 1922	Weighted average weekly hours of labour (a) ..	46.05	46.99	45.51	47.00	46.41	46.93	46.38
	Index-numbers ..	941	960	930	961	948	959	948

(a) Weighted average working hours per week for all industrial groups excepting Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.), in which working hours have not been generally regulated by industrial tribunals.

There was a considerable diminution in each State during the period 1918 to 1921 in the number of working hours constituting a full week's work for male occupations, but during 1922, in certain States, especially in New South Wales, hours of labour were increased. The weighted average weekly hours index-number for Australia at the 31st December, 1922, was 948, as compared with 1,000 at 30th April, 1914, a reduction of 5.2 per cent. The lowest weighted average nominal weekly hours index-number at the 31st December, 1922, was that for Queensland (930), followed in the order named by New South Wales (941), Western Australia (948), Tasmania (959), Victoria (960), and South Australia (961). During the period under review the percentage reduction in hours was greatest in New South Wales (4.4), followed by Queensland and Tasmania (3.0), Western Australia (2.8), Victoria (2.1), and South Australia (1.5)

5. **Nominal and Effective Wages, 1901 to 1922.**—(i) *Nominal Weekly Wage Index-numbers—Each State.* The following table shows the progress in nominal weekly rates of wage for all industries in each State, the weighted average wage for Australia in 1911 being taken as the base (=1,000). These results are based generally upon rates of wage prevailing in the capital city of each State, but in certain industries, such as mining, rates are necessarily taken for places other than the capital towns.

NOMINAL WAGE INDEX-NUMBERS, ADULT MALES, 1901 TO 1922. (WEIGHTED AVERAGE WAGE FOR AUSTRALIA IN 1911=1,000.)

States.	Number of Occupations included.		1901.	1911.	1912.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
	1901 to 1912.	1913 to 1922.												
New South Wales ..	158	874	858	1,003	1,058	1,096	1,124	1,208	1,257	1,286	1,498	1,835	1,869	1,785
Victoria ..	150	909	796	985	1,038	1,065	1,078	1,148	1,229	1,278	1,404	1,679	1,826	1,783
Queensland ..	87	627	901	997	1,010	1,042	1,060	1,177	1,273	1,356	1,534	1,785	1,886	1,830
South Australia ..	134	567	819	1,013	1,048	1,062	1,067	1,151	1,231	1,278	1,373	1,613	1,745	1,708
Western Australia ..	69	489	1,052	1,152	1,191	1,226	1,236	1,272	1,345	1,372	1,516	1,751	1,853	1,829
Tasmania ..	54	482	719	799	934	1,028	1,039	1,112	1,163	1,193	1,346	1,674	1,788	1,728
Australia (a) ..	652	3,948	848	1,000	1,051	1,085	1,102	1,184	1,252	1,296	1,462	1,752	1,844	1,785
				(b)										

(a) Weighted average. (b) Base of table.

NOTE.—The figures in the above table are comparable both horizontally and vertically.

The difference between nominal wages in the several States has decreased very considerably since 1906. Wages in Queensland have increased since 1914 at a higher rate than in any other State. In Tasmania the first determination under the Wages Boards Acts 1910-11 came into force in 1911, and wages in that State have since that date been substantially increased by reason of the operation of the Acts. They are still, however, lower than in any other State except South Australia.

(ii) *Effective Weekly Wage Index-numbers—Each State.* In comparing wages, two elements are of obvious importance, viz., (i) hours worked per day or week, and (ii) the cost of commodities and housing. Thus 60s. per week of 60 hours represents the same hourly rate as 48s. per week for 48 hours. Similarly, if the cost of commodities and housing increases 25 per cent., e.g., if the prices index-number rises from 1,000 to 1,250, then 60s. per week (the index-number being 1,250), is effectively equal only to 48s. (when the index-number was 1,000). Or, again, if the prices index-number falls from 1,000 to 750, then 60s. per week, when the index-number is 750, would have the same purchasing power as 80s. when the index-number was 1,000. Ignoring for the present the number of hours worked, and assuming that the real value of the average wages is to be measured by their purchasing power, the actual average wages paid may be reduced to their effective value by applying the prices index-numbers to the nominal wages index-numbers. The following table shows the effective wage index-numbers so ascertained in each State for each of the years indicated from 1901 to 1922.

In computing these effective wage index-numbers, the nominal wage index-numbers given in the preceding table have been divided by the price index-numbers in paragraph 10 hereinafter. The resulting index-numbers show for each State and for Australia for the years specified the variations in effective wages.

EFFECTIVE WEEKLY WAGE INDEX NUMBERS.—ADULT MALES, 1901 TO 1922.(a)

Particulars.	1901.	1911.	1912	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
New South Wales ..	961	973	922	909	850	867	893	902	948	994	1,084	1,092
Victoria ..	915	1,037	981	964	844	877	950	947	948	939	1,051	1,097
Queensland ..	1,172	1,090	1,032	1,045	912	991	1,078	1,083	1,064	1,085	1,248	1,269
South Australia ..	948	957	906	929	847	896	989	957	935	919	1,056	1,085
Western Australia..	1,024	1,023	1,032	1,073	1,011	1,005	1,079	1,107	1,068	1,083	1,152	1,223
Tasmania ..	827	838	896	943	843	870	894	880	900	911	1,002	1,045
Australia (b) ..	964	1,000 (c)	955	952	862	894	950	952	968	982	1,087	1,116

(a) As to the effect in abnormal periods, see Labour Report No. 6, pp. 20-2, Section IV., par. 3.

(b) Weighted average. (c) Base of table.

Generally speaking, there has been no very great variation in the effective wage except in the years 1915 and 1916, during which prices of commodities advanced rapidly, while wages rose less rapidly. In 1920 effective wages decreased in Victoria and South Australia, and increased in the remaining States. In 1921 the effective wage index-number increased in all the States, the Australian index-number reaching its highest level and exceeding for the first time the base year 1911 (1,000). This was due to the fact that while the cost of food, groceries, and house rent decreased, wages, on the other hand, increased. There was an increase also in effective wages during 1922 due to the fact that wages, though decreasing, did so at a lower rate than the prices of commodities. In the next table index-numbers are given for nominal wages and for the purchasing power of money, together with the effective wage index-number derived therefrom.

One important feature common to both tables (nominal and effective wages) is the manner in which the index-numbers for the individual States have, on the whole, approached one another. With the adoption of rates of wage fixed according to the relative purchasing power of money, it appears probable that this tendency will continue in the future.

(iii) *Effective Wages and Standard of Comfort.* In the preceding table particulars are given as to variations in effective wages in each State, due allowance having been made for variations in retail prices of commodities, though not for unemployment.

For years prior to 1913 the data available as to unemployment are so meagre that comparative results allowing for variations both in prices of commodities and in unemployment cannot be accurately computed for the several States. In the subjoined table,

however, the percentage of unemployment for Australia at the end of the years 1901 to 1913 has been used in order to obtain results showing the variations in unemployment upon effective wages. For 1914 and subsequent years the wages index-numbers, percentages of unemployment, and retail price index-numbers are the average for the year. In similar tables given in preceding issues of the Year Book the wage index-numbers and unemployment percentages have referred to the end of all the years given. If a comparison be made with the results shown in this table and those given in the previous issues, it will be seen that they differ somewhat. The table here given, however, is a more accurate reflection of the position for the years 1914 to 1922 inclusive. Column I. shows the annual rate of wage index-numbers, and Column II. the relative percentages unemployed. Applying these percentages to the numbers shown in Column I., and deducting the results from each corresponding index-number, so as to allow for relative loss of time, the figures in Column III. are obtained. These figures are then re-computed with the year 1911 as base, and are shown in Column IV. In Column V. the retail prices index-numbers are shown, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and secondly, allowing for lost time. These are obtained by dividing the figures in Columns I. and IV. respectively by the corresponding figure in Column V. The resulting index-numbers show for Australia for the years specified the variations in effective wages, or in what may be called the "standard of comfort."*

A comparison between the figures in Columns I. and VI. gives the relation between the nominal rates of wage and the purchasing efficiency of these rates. The figures in Column VII. show variations in effective wages after allowing not only for variations in purchasing power of money, but also for the relative extent of unemployment.

WAGE INDEX-NUMBERS, NOMINAL AND EFFECTIVE, 1901 TO 1922.(a)

Year.	I. Nominal Wage Index- Numbers.	II. Percentage Unem- ployed.	Rate of Wage Index- Numbers, Allowing for Lost Time.		V. Retail Price Index- Numbers.	Effective Wage Index-Numbers.	
			III. Actual.	IV. Re-com- puted. (1911 = 1,000).		VI. Full Work.	VII. Allowing for Unemploy- ment.
1901	848	6.6	793	832	880	964	945
1906	866	6.7	808	848	902	960	940
1907	893	5.7	842	884	897	996	986
1908	900	6.0	846	888	951	946	934
1909	923	5.8	870	913	948	974	963
1910	955	5.6	901	945	970	985	974
1911	1,000	4.7	953	1,000	1,000	1,000	1,000
1912	1,051	5.5	993	1,042	1,101	955	946
1913	1,076	5.3	1,021	1,071	1,104	975	970
1914	1,081	8.3	991	1,040	1,140	948	912
1915	1,092	9.3	990	1,039	1,278	854	813
1916	1,144	5.8	1,078	1,131	1,324	864	854
1917	1,226	7.1	1,139	1,195	1,318	930	907
1918	1,270	5.8	1,196	1,255	1,362	932	921
1919	1,370	6.6	1,280	1,343	1,510	907	889
1920	1,627	6.5	1,521	1,596	1,785	911	894
1921	1,826	11.2	1,621	1,701	1,697	1,076	1,002
1922	1,801	9.3	1,634	1,715	1,600	1,126	1,072

(a) As to the effect in abnormal periods, see Section IV., par. 3, of Labour Report No. 6.

NOTE.—For years prior to 1914, the nominal wage index-numbers and the percentage unemployed relate to the end of the year only, but from 1914 onward these figures, in addition to those for retail prices, are averages for the whole year.

* This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Labour Report No. 1), that is, a change in the nature or in the relative quantity of commodities purchased, or both. A change in the "standard of comfort" merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in the "standard of living."

During the period 1901 to 1922, while the nominal wage index-number rose from 848 to 1,801, an increase of 112.4 per cent., prices rose from 880 to 1,600, or by 81.8 per cent, the net result therefore being that effective full time wages rose by only 16.8 per cent. Compared with 1911, effective wages show a rise of 12.6 per cent., although nominal wages increased by 80.1 per cent.

§ 7. Changes in Rates of Wage.

1. **General.**—A change in rate of wage is defined as a change in the weekly rates of remuneration of a certain class of employees, apart from any change in the nature of the work performed and apart from any revision of rates due to increased length of service or experience. It is obvious that under this definition certain classes of changes are excluded, such, for example, as (a) changes in rates of pay due to promotion, progressive increments, or, on the other hand, to reduction in pay or grade to inefficient workers, and (b) changes in average earnings in an occupation due to a change in the proportions which more highly-paid classes of workers bear to those paid at lower rates. Bonuses to employees have not been taken into account in the tabulations. Each single change recorded relates to a change in the rates of wage effected in a specific industry or calling, and includes any and all changes to workers in that industry, irrespective of the different number of separate occupations or trades affected. Further, it should be observed that in some instances a change may relate to the employees of a single employer or to those of a number of employers, according to the instrument or method operating to bring about the change.

2. **Methods by which Changes were Effected and Results.**—(i) *Summary, Australia, 1922.* In the following table particulars are given for Australia of the number of changes in rates of wage, the number of workpeople affected, and the total net amount of increase to the weekly wage distribution brought about either without, or after, stoppage of work, during the year 1922, as a result of the application of one or other of the methods set out in the tables :—

CHANGES IN RATES OF WAGE.—METHODS AND RESULTS, AUSTRALIA, 1922.(a)

Methods by which Changes were Effected.	Without Stoppage of Work.			After Stoppage of Work.			All Changes.		
	No. of Changes.	No. of Work- people Affected.	Total Net Amount of Increase per week.	No. of Changes.	No. of Work- people Affected.	Total Net Amount of Increase per Week.	No. of Changes.	No. of Work- people Affected.	Total Net Amount of Increase per week.
By direct negotiations	14	6,943	1,784	7	243	121	21	7,186	1,905
By negotiations, intervention or assistance of third party(a) . .	36	54,878	5,122	..	..	..	36	54,878	5,122
By award of Court under Com- monwealth Act(a)	64	125,161	(b)12,312	1	34	5	65	125,195	(b) 12,307
By agreement registered under Commonwealth Act(a)	53	43,002	(b) 4,242	..	..	..	53	43,002	(b) 4,242
By award or determination under State Acts	594	376,964	(b)58,284	1	30	18	595	376,994	(b) 58,266
By agreement registered under State Acts	54	20,861	(b) 2,774	..	..	..	54	20,861	(b) 2,774
TOTAL(a)	815	627,809	(b)70,706	9	307	144	824	628,116	(b)70,562

(a) In this section of the table an Award or Agreement under the Commonwealth Conciliation and Arbitration Act, the Arbitration (Public Service) Act, the Industrial Peace Act, or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement, or Order may be operative in more than one State. (b) Decrease.

The total number of changes recorded during the year 1922 was 824, of which 595 or 72 per cent. of the total number were brought about by award or determination under State Industrial Acts. Of these 595 changes, 355 occurred in New South Wales, 31 in Victoria, 112 in Queensland, 66 in South Australia, 15 in Western Australia, and 16 in Tasmania.

(ii) *Summary, Australia, 1918 to 1922.* Comparative particulars are contained in the following table of the total number and effect of all changes in rates of wage brought about throughout Australia during the years indicated, as a result of the application of one or other of the specified methods:—

**CHANGES IN RATES OF WAGE.—METHODS AND RESULTS, AUSTRALIA,
1918 TO 1922.**

Particulars.	By Voluntary Action of Employers.	By Direct Negotiations.	By Negotiations, Intervention or Assistance of Third Party.	By Award of Court under C'wealth Act.	By Agreement Registered under C'wealth Act.	By Award or Determination under State Act.	By Agreement Registered under State Act.	TOTAL.(a)
1918.								
Number of Changes ..	14	132	3	39	142	354	95	779
Number of Workpeople affected	12,916	43,428	591	20,502	6,764	270,777	6,603	361,581
Amount of Increase per week £	2,396	9,473	334	4,481	1,683	64,642	2,251	85,260
1919.								
Number of Changes ..	36	238	29	42	141	582	100	1,168
Number of Workpeople affected	10,285	84,535	45,049	67,741	27,244	337,625	31,412	603,891
Amount of Increase per week £	4,373	28,937	24,233	29,584	10,017	148,632	10,669	256,445
1920.								
Number of Changes ..	28	333	23	64	163	978	135	1,724
Number of Workpeople affected	15,193	169,973	64,691	75,048	26,733	648,083	27,565	1,027,286
Amount of Increase per week £	4,597	85,469	38,441	24,807	11,608	315,728	14,058	494,708
1921.								
Number of Changes ..	4	148	18	66	55	594	87	972
Number of Workpeople affected	2,000	77,210	73,704	139,773	24,166	391,215	24,197	732,265
Amount of Increase per week £	565	20,711	26,286	44,360	12,209	76,814	4,713	185,658
1922.								
Number of Changes ..	..	21	36	65	53	595	54	824
Number of Workpeople affected	..	7,186	54,878	125,195	43,002	376,994	20,861	628,116
Amount of Increase per week £	..	1,905	5,122	b 12,307	b 4,242	b 58,266	b 2,774	b 70,562

(a) See footnote to table on page 586. (b) Decrease.

The greatest number of changes throughout the period under review was effected through the instrumentalities of the State Acts, and these show an increase from 57.6 per cent. of all changes in 1918 to 79 per cent. in 1922, while the changes made under the Commonwealth Acts have decreased from 23 per cent. to 13 per cent. It is interesting to observe the very marked extent to which "direct negotiations" between parties has declined in the later years. In 1918, 132 changes, or 17 per cent., of the total affecting only 12 per cent. of all persons concerned in the changes of that year, were brought about by direct negotiations, whereas in 1922, only 21 changes (25 per cent.), affecting 7,186 persons, or 1 per cent. of the whole, resulted from this agency. It must be mentioned that, so far as possible, the effect of awards or agreements is recorded in the figures for the year in which such awards or agreements are made and filed. In certain cases, however, the awards or agreements are made retrospective as to the date on which the increased rate of wage has to be paid, while in others the particulars as to the number of workpeople affected and the effect of the change are difficult to ascertain.

3. **Number and Effect of Changes.**—(i) *General.* The following tables give particulars of changes which occurred in each State during the years specified. As regards the number of persons affected, the particulars given refer to the total number of persons ordinarily engaged in the various industries. The results as to the amount of increase in wages are computed for a full week's work for all persons ordinarily engaged in the several industries and occupations affected, and in cases of changes in existing minimum rates under awards or determinations of industrial tribunals, it has been assumed (in the absence of any definite information to the contrary) that the whole of the employees in each occupation received the minimum rates of wage before and after the change.

It should be clearly understood that the figures given in regard to the amount of increase per week do not relate to the increase each week, but only to the increase in a single week on the assumption that the full number of persons ordinarily engaged in the particular trade or occupation affected by the change were employed during that week. It is obvious, therefore, that the aggregate effect per annum cannot be obtained without making due allowance for unemployment and for occupations in which employment is seasonal or intermittent. It is also clear that since unemployment and activity in all branches of industry may vary from year to year, and in many branches from season to season also, no accurate estimate of the actual effect of the changes in the total amount of wages received or paid per annum can be made until the determining factors have been investigated. These factors are (a) the amount of unemployment, and (b) the period of employment in seasonal industries.

It should be observed that changes brought about by awards and agreements under the Commonwealth Conciliation and Arbitration Act, the Arbitration (Public Service) Act, and the Industrial Peace Act 1920 are necessarily included hereunder as changes in each State to which such awards and agreements apply. The average increase per head per week is computed to the nearest penny.

(ii) *Summary for States, 1922.* During the year 1922 the number of decreases in rates of wage recorded was greatly in excess of those for any previous year, the net result being that a decrease has occurred for the first time since the record of these changes was commenced. In the following table particulars are given of the number and effect of increases and decreases in rates of wage in each State during the year :—

CHANGES IN RATES OF WAGE.—NUMBER AND EFFECT, 1922.

State.	INCREASES.			DECREASES.			TOTAL RESULT OF ALL CHANGES.		
	Changes.	Work-people Affected.	Increase Per Week.	Changes.	Work-people Affected.	Decrease Per Week.	Changes.	Work-people Affected.	Net Decrease Per Week.
			£			£			£
New South Wales	75	77,350	10,742	369	286,559	53,672	444	363,909	42,930
Victoria ..	77	36,374	5,896	60	53,798	12,521	137	90,172	6,625
Queensland ..	22	3,004	716	110	75,787	15,552	132	78,791	14,836
South Australia ..	55	11,310	2,326	76	24,412	5,013	131	35,722	2,687
Western Australia	39	5,726	1,274	21	12,821	2,863	60	18,547	1,589
Tasmania ..	35	5,853	706	29	10,185	2,407	64	16,038	1,701
Federal Capital Territory ..	..	..	..	1	337	56	1	337	56
Common to all States ..	2	16,400	752	1	8,200	890	3	24,600	138
Total ..	305	156,017	22,412	667	472,099	92,974	972	628,116	70,562

The changes in wages given in the preceding table include all changes which have occurred either through the operations of wage tribunals or as the result of direct negotiations between employers and employees. In three States there have been general reductions in the basic wage which affected all employees working under State awards or agreements. In New South Wales the Board of Trade reduced the basic wage from £4 2s. to £3 18s. for males, and from £2 1s. to £1 19s. 6d. for females; in Queensland a reduction was made by the Arbitration Court from £4 5s. to £4 for males, and from £2 3s. to £2 1s. for females; and in South Australia a reduction for males from £3 19s. 6d. to £3 17s. 6d. was made by the Board of Industry. Many workers in all States come under the jurisdiction of awards made by the Federal Arbitration Court. The principle of quarterly adjustments adopted by that Court led to decreases in wages during the former half of the year, and increases during the latter half.

CHANGES IN RATES OF WAGE.—NUMBER AND EFFECT, 1918 TO 1922.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	F.C.T.	(a) All States.	Aust.
No. of Changes	{ 1918 229 1919 457 1920 734 1921 353 1922 444	{ 201 218 354 247 137	{ 236 216 300 233 132	{ 113 136 231 166 131	{ 63 112 209 108 60	{ 46 128 154 77 64	{ 4 13 7	{ 1	{ 4 4 10 16 3	{ 896 1,284 1,999 1,200 972
No. of Persons Affected	{ 1918 146,399 1919 280,031 1920 454,610 1921 272,782 1922 363,909	{ 110,027 125,693 258,211 238,084 90,172	{ 74,174 116,627 145,464 115,722 78,791	{ 16,239 35,377 76,605 44,696 35,722	{ 9,871 26,673 55,489 22,695 18,547	{ 3,631 16,108 28,317 14,783 16,038	{ 624 1,287 703	{ 337	{ 616 2,095 7,887 23,503 24,600	{ 361,581 603,891 1,027,286 732,265 628,116
Total Net Amount of Increase per Week	{ 1918 £ 32,194 1919 £ 137,642 1920 £ 223,186 1921 £ 38,371 1922 £ 642,930	{ £ 25,514 £ 43,930 £ 119,706 £ 77,425 £ 66,625	{ £ 19,699 £ 43,718 £ 69,748 £ 30,790 £ 614,836	{ £ 3,885 £ 11,989 £ 30,316 £ 13,409 £ 62,687	{ £ 2,133 £ 10,249 £ 25,195 £ 11,395 £ 61,589	{ £ 1,323 £ 7,350 £ 14,593 £ 6,370 £ 61,701	{ £ 273 £ 618 £ 684	{ £ .. £ .. £ .. £ .. £ 656	{ £ 239 £ 949 £ 6,280 £ 7,898 £ 6138	{ £ 85,260 £ 256,445 £ 494,708 £ 185,658 £ 670,562
Average Increase per Head per Week	{ 1918 s. d. 4 5 1919 s. d. 9 10 1920 s. d. 10 0 1921 s. d. 2 10 1922 s. d. 62 4	{ s. d. 4 8 s. d. 7 0 s. d. 9 3 s. d. 6 6 s. d. 61 6	{ s. d. 5 4 s. d. 7 6 s. d. 9 7 s. d. 5 4 s. d. 63 9	{ s. d. 4 9 s. d. 6 9 s. d. 7 11 s. d. 6 0 s. d. 61 6	{ s. d. 4 4 s. d. 7 8 s. d. 9 1 s. d. 10 1 s. d. 61 9	{ s. d. 7 3 s. d. 9 2 s. d. 10 4 s. d. 8 7 s. d. 62 1	{ s. d. 8 9 s. d. 9 7 s. d. 19 6	{ s. d. .. s. d. .. s. d. .. s. d. .. s. d. 634	{ s. d. 7 9 s. d. 9 1 s. d. 15 11 s. d. 6 9 s. d. 60 1	{ s. d. 4 9 s. d. 8 6 s. d. 9 8 s. d. 5 1 s. d. 62 3

(a) Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable. (b) Decrease.

The number of changes in rates of wage recorded during the year 1920 is higher in each State than during any other year. There was a noticeable decrease in the total number of changes recorded during 1921 as compared with the year 1920, the reduction being general in all States, while in 1922 there was a further reduction in all States with the exception of New South Wales. The relative position of the States in regard to the numbers of changes effected, and also in regard to the numbers of workers affected in each year is, of course, largely due to the magnitude of the different industries and callings in which changes took place.

(iii) *In Industrial Groups, Australia. Total Workpeople (Male and Female) affected by Changes.* In the following table particulars are given of the number of changes, the number of persons (males and females) affected, and the total amount of increase per week, classified according to Industrial Groups throughout Australia during the years 1918 to 1922 :—

**CHANGES IN RATES OF WAGE.—INDUSTRIAL GROUPS, AUSTRALIA,
1918 TO 1922.(a)**

Particulars.	Industrial Group.							
	I. Wood, Furniture, Timber, etc.	II. Engineering, Metal Works, etc.	III. Food, Drink Tobacco, etc.	IV. Clothing, Hats, Boots, etc.	V. Books, Printing, etc.	VI. Other Manufacturing.	VII. Building.	VIII. Mines, Quarries, etc.
1918.								
Number of Changes ..	61	42	93	26	24	78	30	25
Number of Persons affected ..	14,651	31,804	32,411	23,215	8,707	15,160	17,419	14,285
Amount of increase per week £	4,343	10,565	9,025	5,252	1,804	3,944	5,420	2,988
1919.								
Number of Changes ..	39	89	156	31	41	138	42	29
Number of Persons affected ..	13,616	44,133	72,603	26,905	9,335	50,530	19,053	34,501
Amount of increase per week £	4,890	20,381	23,551	11,308	4,449	17,829	8,941	17,434
1920.								
Number of Changes ..	68	123	241	56	83	245	82	61
Number of Persons affected ..	44,732	74,853	81,876	55,345	19,757	71,671	61,552	47,865
Amount of increase per week £	19,015	29,145	41,383	21,271	11,088	31,126	41,059	30,385
1921.								
Number of Changes ..	22	81	105	45	28	156	27	22
Number of Persons affected ..	11,915	58,632	55,555	89,542	12,116	55,766	24,717	6,322
Amount of increase per week £	2,650	17,244	13,658	16,143	4,000	14,666	10,196	2,896
1922.								
Number of Changes ..	17	90	74	24	32	116	29	27
Number of Persons affected ..	14,824	68,844	34,987	13,793	13,533	64,285	48,603	17,716
Amount of decrease per week £	2,028	14,399	5,805	1,412	1,722	6,784	8,069	2,330

Particulars.	Industrial Group—continued.						
	IX. Rail and Tram Services.	X. Other Land Transport.	XI. Shipping, etc.	XII. Pastoral, Agricultural, etc.	XIII. Domestic, Hotels, etc.	XIV. Miscellaneous.	ALL GROUPS. (a)
1918.							
Number of Changes ..	38	25	38	6	23	270	779
Number of Persons affected ..	59,625	12,782	1,990	1,717	9,230	118,585	361,581
Amount of increase per week £	10,320	2,185	719	350	2,167	26,178	85,260
1919.							
Number of Changes ..	74	37	59	11	49	373	1,168
Number of Persons affected ..	114,365	20,871	34,294	9,030	25,799	128,856	603,891
Amount of increase per week £	56,872	8,701	18,168	5,739	7,620	50,562	256,445
1920.							
Number of Changes ..	82	52	76	19	55	481	1,724
Number of Persons affected ..	136,854	28,532	16,842	26,580	34,285	326,542	1,027,286
Amount of increase per week £	54,959	11,605	11,871	20,701	12,258	158,842	494,708
1921.							
Number of Changes ..	67	32	44	10	39	294	972
Number of Persons affected ..	127,860	24,885	37,904	1,815	17,904	207,332	732,265
Amount of increase per week £	18,573	2,717	17,986	853	4,339	59,737	185,658
1922.							
Number of Changes ..	66	36	23	14	28	248	824
Number of Persons affected ..	86,161	12,603	28,432	56,292	15,663	152,380	628,116
Amount of decrease per week £	15,311	2,075	559	(b) 4,136	1,288	12,916	70,562

(a) In this table an Industrial Award or Agreement under the Commonwealth Conciliation and Arbitration Act, the Arbitration (Public Service) Act, the Industrial Peace Act, or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement or Order may be operative in more than one State. (b) Increase.

(iv) *In Male and Female Occupations.* Included in the changes in rates of wage recorded in the table on page 589 are those which in the whole or part thereof affected female occupations. Particulars in respect of these changes in so far as they relate to the numbers of male and female workers affected, etc., are set out hereunder :—

CHANGES IN RATES OF WAGE.—EFFECTS IN MALE AND FEMALE
OCCUPATIONS, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	All States. (a)	Australia.
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NUMBER OF MALE EMPLOYEES AFFECTED.

1918	128,728	91,857	59,909	12,889	8,452	3,487	624	..	616	306,562
1919	253,077	106,389	99,167	32,162	24,185	13,906	1,287	..	2,025	532,198
1920	335,118	202,972	126,306	66,824	48,088	24,213	703	..	7,812	862,036
1921	219,813	185,895	90,918	37,062	19,988	13,484	..	..	21,710	588,870
1922	322,813	85,005	64,473	34,085	18,248	14,473	..	337	24,600	564,034

NET AMOUNT OF INCREASE PER WEEK TO MALE EMPLOYEES.

	£	£	£	£	£	£	£	£	£	£
1918	29,410	22,574	16,186	3,311	1,889	1,284	273	..	239	75,166
1919	132,237	38,115	38,200	10,690	9,560	6,560	618	..	920	236,900
1920	207,403	98,778	63,432	27,498	22,157	13,105	684	..	6,192	439,249
1921	26,735	68,087	26,649	12,079	10,737	6,119	..	..	6,891	157,297
1922	(b)40,245	(b)6,943	(b)13,965	(b)2,626	(b)1,640	(b)1,818	..	(b) 56	(b) 138	(b) 67,431

AVERAGE INCREASE PER HEAD PER WEEK TO MALE EMPLOYEES.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1918	4 7	4 11	5 5	5 2	4 6	7 4	8 9	..	7 9	4 11
1919	10 5	7 2	7 8	6 8	7 11	9 5	9 7	..	9 1	8 11
1920	10 9	9 9	10 1	8 3	9 3	10 10	19 6	..	15 10	10 2
1921	2 5	7 4	5 10	6 6	10 9	9 1	..	..	6 4	5 4
1922	(b) 2 6	(b)1 8	(b)4 4	(b)1 6	(b)1 10	(b)2 6	..	(b)3 4	(b)0 1	(b) 2 5

NUMBER OF FEMALE EMPLOYEES AFFECTED.

1918	17,671	18,170	14,265	3,350	1,419	144	..	..	..	55,019
1919	26,954	19,304	17,460	3,215	2,488	2,202	..	..	70	71,693
1920	69,492	55,239	19,158	9,781	7,401	4,104	..	..	75	165,250
1921	52,969	52,189	24,804	7,634	2,707	1,299	..	..	1,793	143,395
1922	41,096	5,167	14,318	1,637	299	1,565	..	..	..	64,082

NET AMOUNT OF INCREASE PER WEEK TO FEMALE EMPLOYEES.

	£	£	£	£	£	£	£	£	£	£
1918	2,784	2,940	3,513	574	244	39	..	..	..	10,094
1919	5,405	5,815	5,518	1,299	689	790	..	..	29	19,545
1920	20,783	20,928	6,316	2,818	3,038	1,488	..	..	88	55,459
1921	11,636	9,338	4,141	1,330	658	251	..	..	1,007	28,361
1922	(b) 2,685	318	(b) 871	(b) 61	51	117	..	..	..	(b) 3,131

AVERAGE INCREASE PER HEAD PER WEEK TO FEMALE EMPLOYEES.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1918	3 2	3 3	4 11	3 5	3 5	5 5	..	..	..	3 8
1919	4 0	6 0	6 4	8 1	5 6	7 2	..	..	8 3	5 5
1920	6 0	7 7	6 7	5 9	8 3	7 3	..	..	23 6	6 9
1921	4 5	3 7	3 4	3 6	4 10	3 10	..	..	11 3	3 11
1922	(b)1 4	1 3	(b) 1 4	(b)0 9	3 5	1 6	..	..	..	(b) 1 0

(a) Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable. (b) Decrease.

§ 8. Industrial Disputes.

1. **General.**—Information with regard to the collection of particulars and methods of tabulation of industrial disputes involving stoppage of work has appeared in previous issues of the Year Book, and is also given in the Annual Reports of the Labour and Industrial Branch of this Bureau.

In *annual** tabulations, particulars are included of all disputes which either *commenced* or were *current* during the year under review. As regards “number of disputes,” and “number of establishments involved,” therefore, duplication will take place in respect of those disputes which started in and were uncompleted at the end of a preceding year; the number involved will, however, be indicated in a footnote, to permit of due allowance being made therefor in any calculations made from the tables.

2. **Industrial Disputes Involving Stoppage of Work, Classified in Industrial Groups, 1922.**—The following tables give particulars of industrial disputes which either commenced or were current during the year 1922, classified according to industrial groups. Similar information for the years 1913 to 1921 was published in Labour Reports Nos. 5 to 12.

INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1922.

Class.	Industrial Group.	No. of Disputes.	No. of Estab. Involved.	No. of Workpeople Involved.			No. of Working Days Lost.	Estimated Loss in Wages.
				Directly.	In-directly.	Total.		
NEW SOUTH WALES.								
II.	Engineering, metal works, etc.	14	314	2,969	1,114	4,083	138,215	103,687
III.	Food, drink, etc., manufacturing and distribution ..	7	9	677	127	804	1,513	1,389
IV.	Clothing, hats, boots, etc. ..	1	1	18	..	18	54	66
VI.	Other manufacturing ..	9	12	2,281	142	2,423	19,632	14,559
VIII.	Mines, quarries, etc. ..	285	295	80,389	12,265	92,654	354,765	401,807
IX.	Railway and tramway services	6	6	214	116	330	1,122	784
X.	Other land transport ..	1	1	30	..	30	270	270
XI.	Shipping, wharf labour, etc. ..	11	11	572	244	816	54,547	40,344
XII.	Pastoral, agricultural, etc. ..	1	1	13	4	17	17	30
XIV.	Miscellaneous ..	7	7	1,094	30	1,124	16,385	11,555
Total		342	657	88,257	14,042	102,299	586,520	579,491
VICTORIA.								
I.	Wood, sawmill, timber, etc. ..	1	150	1,500	..	1,500	9,000	6,600
II.	Engineering, metal works, etc ..	4	92	546	230	776	15,998	9,882
III.	Food, drink, etc. ..	4	124	871	..	871	9,486	7,418
VI.	Other manufacturing ..	4	30	313	..	313	5,923	3,911
VII.	Building ..	1	1	66	52	118	826	631
VIII.	Mines, quarries, etc. ..	6	6	2,171	2	2,173	15,937	14,252
IX.	Railway and tramway services	2	2	112	17	129	909	475
XI.	Shipping, etc. ..	4	4	119	10	129	6,403	4,382
XII.	Pastoral, agricultural, etc. ..	1	1	22	..	22	22	10
XIV.	Miscellaneous ..	2	2	99	..	99	197	134
Total		29	412	5,819	311	6,130	64,701	47,695
QUEENSLAND.								
I.	Wood, sawmill, timber, etc. ..	1	1	13	12	25	2,325	2,083
II.	Engineering, metal works, etc.	1	1	23	..	23	161	42
III.	Food, drink, etc. ..	7	7	847	..	847	3,072	2,372
VI.	Other manufacturing ..	1	1	106	36	142	3,124	2,325
VII.	Building ..	2	11	139	..	139	2,834	2,601
VIII.	Mines, quarries, etc. ..	12	12	735	..	735	6,457	7,436
IX.	Railway and tramway services	6	6	460	467	927	8,621	6,160
XI.	Shipping, wharf labour, etc. ..	4	6	129	99	228	9,726	9,265
XII.	Pastoral, agricultural, etc. ..	2	2	62	..	62	161	138
XIV.	Miscellaneous ..	2	2	97	6	103	249	167
Total		38	49	2,611	620	3,231	36,730	32,589

(a) Two disputes in New South Wales (involving 2 establishments and 85 workers) and 1 dispute in South Australia (1 establishment and 39 workers) commenced in 1921.

* In respect of years prior to 1922, the figures include complete particulars of industrial disputes which commenced during any calendar year; and where any such dispute extended into a subsequent year, the relative figures were also incorporated in those for the year in which the dispute commenced.

INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS,
1922—continued.

Class.	Industrial Group.	No. of Disputes.	No. of Estab. In- volved.	No. of Workpeople Involved.			No. of Working Days Lost.	Esti- mated Loss in Wages.
				Directly.	In- directly.	Total.		
SOUTH AUSTRALIA.								
II.	Engineering, metal works, etc.	2	2	102	111	213	865	659
III.	Food, drink, etc. ..	2	4	42	..	42	390	315
IV.	Clothing, hats, boots, etc. ..	1	200	1,550	450	2,000	104,000	36,600
VI.	Other manufacturing ..	2	2	29	181	210	1,326	928
VII.	Building ..	1	6	30	..	30	60	48
VIII.	Mines, quarries, etc. ..	1	1	213	153	366	4,758	2,675
IX.	Railway and tramway services	1	1	25	..	25	600	450
XI.	Shipping, wharf labour, etc. ..	5	5	136	31	167	2,042	1,343
XII.	Pastoral, agricultural, etc. ..	1	2	17	..	17	34	20
XIV.	Miscellaneous ..	3	6	150	3	153	259	184
Total		(a) 19	229	2,294	929	3,223	114,334	43,222
WESTERN AUSTRALIA.								
I.	Wood, sawmill, timber, etc. ..	1	1	8	3	11	528	300
II.	Engineering, metal works, etc.	1	80	448	25	473	38,786	32,561
V.	Books, printing, etc. ..	1	5	112	..	112	3,136	4,500
VIII.	Mines, quarries, etc. ..	2	2	14	135	149	609	493
XI.	Shipping, wharf labour, etc. ..	3	3	61	..	61	413	354
Total		8	91	643	163	806	43,472	38,208
TASMANIA.								
I.	Wood, sawmill, timber, etc. ..	1	1	90	..	90	3,330	2,636
II.	Engineering, metal works, etc.	2	2	208	..	208	5,010	4,101
V.	Books, printing, etc. ..	1	1	10	4	14	56	60
VIII.	Mines, quarries, etc. ..	1	1	74	..	74	888	700
Total		5	5	382	4	386	9,284	7,497
NORTHERN TERRITORY.								
IX.	Railway and tramway services	1	1	10	..	10	140	140
XI.	Shipping, wharf labour, etc. ..	1	1	30	..	30	900	630
Total		2	2	40	..	40	1,040	770
FEDERAL CAPITAL TERRITORY.								
II.	Engineering, metal works, etc.	1	1	17	..	17	204	165
XIV.	Miscellaneous ..	1	1	200	..	200	2,400	1,870
Total		2	2	217	..	217	2,604	2,035
ALL STATES.								
I.	Wood, sawmill, timber, etc. ..	4	153	1,611	15	1,626	15,183	11,619
II.	Engineering, metal works, etc. ..	25	492	4,313	1,480	5,793	199,239	156,097
III.	Food, drink, etc., manufacturing and distribution ..	20	144	2,437	127	2,564	14,461	11,494
IV.	Clothing, boots, etc. ..	2	201	1,568	450	2,018	104,054	36,666
V.	Books, printing, etc. ..	2	6	122	4	126	3,192	4,560
VI.	Other manufacturing ..	16	45	2,729	359	3,088	30,005	21,723
VII.	Building ..	4	18	235	52	287	3,720	3,280
VIII.	Mines, quarries, etc. ..	307	317	83,596	12,555	96,151	383,414	427,363
IX.	Railway and tramway services	16	16	821	600	1,421	11,392	8,009
X.	Other land transport ..	1	1	30	..	30	270	270
XI.	Shipping, wharf labour, etc. ..	28	30	1,047	384	1,431	74,031	56,318
XII.	Pastoral, agricultural, etc. ..	5	6	114	4	118	234	198
XIV.	Miscellaneous ..	15	18	1,640	39	1,679	19,490	13,910
Total for Australia ..		(a) 445	1,447	100,263	16,069	116,332	858,685	751,507

(a) See footnote (a), page 592.

3. Industrial Disputes,* Australia, 1918 to 1922.—The following table gives particulars of the number of industrial disputes, the number of workpeople involved, and the losses in working days and wages caused by disputes which either commenced or were current during each *calendar* year 1918 to 1922, classified according to industrial groups:—

INDUSTRIAL DISPUTES—AUSTRALIA, 1918 TO 1922.(a)

Calendar Year.	Manu- facturing. (Groups I. to VI.)	Building. (Group VII.)	Mining. (Group VIII.)	Transport, Land and Sea. (Groups IX. to XI.)	Miscel- laneous. (Groups XII. to XIV.)	ALL GROUPS.
NUMBER OF DISPUTES.						
1918.. ..	77	11	135	31	44	298
1919.. ..	94	12	231	67	56	460
1920.. ..	89	17	316	75	57	554
1921.. ..	30	9	509	46	30	624
1922.. ..	69	4	307	45	20	(a) 445
1918 to 1922 ..	359	53	1,498	264	207	2,381
NUMBER OF WORKPEOPLE INVOLVED.						
1918.. ..	10,472	685	35,149	6,507	3,626	56,439
1919.. ..	19,550	2,810	86,607	36,386	12,238	157,591
1920.. ..	21,092	6,527	81,043	15,043	31,861	155,566
1921.. ..	3,161	1,421	133,547	22,694	4,278	165,101
1922.. ..	15,215	287	96,151	2,882	1,797	116,332
1918 to 1922 ..	69,490	11,730	432,497	83,512	53,800	651,029
NUMBER OF WORKING DAYS LOST.						
1918.. ..	217,425	3,602	215,573	38,922	64,071	539,593
1919.. ..	272,405	124,003	1,826,694	1,898,900	181,736	4,303,738
1920.. ..	367,296	103,373	1,944,038	626,826	545,734	3,587,267
1921.. ..	47,385	36,406	467,867	666,517	68,010	1,286,185
1922.. ..	366,134	3,720	383,414	85,693	19,724	858,685
1918 to 1922 ..	1,270,645	271,104	4,837,586	3,316,858	879,275	10,575,468
ESTIMATED LOSS IN WAGES.						
1918.. ..	£ 131,811	£ 2,235	£ 146,676	£ 21,298	£ 43,114	£ 345,134
1919.. ..	167,502	73,643	1,280,265	977,494	119,924	2,618,828
1920.. ..	215,057	70,006	1,418,193	357,786	309,345	2,370,387
1921.. ..	39,416	24,719	459,450	397,169	49,721	970,475
1922.. ..	242,159	3,280	427,363	64,597	14,108	751,507
1918 to 1922 ..	795,945	173,883	3,731,947	1,818,344	536,212	7,056,331

(a) See footnote (a), page 592.

4. Summary of Disputes (involving Stoppage of Work), 1918 to 1922 (a).—The following table gives particulars of the number of industrial disputes in each State in various years from 1918 to 1922, together with the number of workpeople involved, the number of working days lost, and the total estimated loss in wages.

(*) It should be observed that this table shows the full effect of all disputes which either occurred or were current during each calendar year, and that the footnote * on page 592 does not, therefore, apply.

INDUSTRIAL DISPUTES—SUMMARY, 1918 TO 1922.(a)

State or Territory.	Year.	No. of Disputes.	Establishments Involved in Disputes.	No. of Workpeople Involved.			No. of Working Days Lost.	Total Estimated Loss in Wages.
				Directly.	In-directly.	Total.		
								£
New South Wales ..	1918	138	182	24,417	8,624	33,041	181,639	112,894
	1919	267	678	64,956	35,040	99,996	4,324,686	2,856,259
	1920	349	650	68,033	22,349	90,382	587,156	432,988
	1921	535	567	108,573	29,921	138,494	547,838	493,267
	1922	(b) 342	657	88,257	14,042	102,299	586,520	579,491
Victoria ..	1918	33	190	4,235	1,513	5,748	165,020	99,346
	1919	62	372	15,169	7,437	22,606	733,333	392,796
	1920	53	809	15,274	24,534	39,808	783,286	465,244
	1921	20	118	4,119	2,161	6,280	109,595	69,629
	1922	29	412	5,819	311	6,130	64,701	47,695
Queensland ..	1918	84	696	8,803	1,875	10,678	183,883	131,142
	1919	69	295	9,078	6,336	15,414	586,661	327,537
	1920	55	71	3,775	2,033	5,808	68,298	44,943
	1921	33	97	3,367	1,512	4,879	95,560	69,793
	1922	38	49	2,611	620	3,231	36,730	32,589
South Australia ..	1918	17	25	1,576	429	2,005	18,276	10,515
	1919	32	75	4,437	3,409	7,846	238,378	127,303
	1920	40	126	4,732	1,067	5,799	232,402	140,326
	1921	19	45	2,158	1,002	3,160	57,038	37,315
	1922	(b) 19	229	2,294	929	3,223	114,334	43,222
Western Australia ..	1918	22	56	3,368	1,435	4,803	31,145	17,792
	1919	20	157	5,516	4,460	9,976	359,987	213,867
	1920	45	434	9,095	2,918	12,013	146,640	108,055
	1921	12	56	1,906	10,157	12,063	145,103	86,038
	1922	8	91	643	163	806	43,472	38,208
Tasmania ..	1918	1	1	42	..	42	462	250
	1919	5	127	1,098	588	1,686	63,271	32,738
	1920	12	14	1,610	146	1,756	54,283	32,160
	1921	5	5	75	150	225	1,483	986
Fed. Cap. Territory	1922	5	5	382	4	386	9,284	7,497
	1922	2	2	217	..	217	2,604	2,035
Northern Territory	1918	3	4	112	10	122	428	395
	1919	5	9	46	21	67	1,910	1,436
	1920	..	..	..	..	..	..	..
	1922	2	2	40	..	40	1,040	770
Australia ..	1918	298	1,154	42,553	13,886	56,439	580,853	372,334
	1919	460	1,713	100,300	57,291	157,591	6,308,226	3,951,936
	1920	554	2,104	102,519	53,047	155,566	1,872,065	1,223,716
	1921	624	888	120,198	44,903	165,101	956,617	757,028
	1922	(b) 445	1,447	100,263	16,069	116,332	858,685	751,507

(a) See footnote *, page 592.

(b) See footnote (a), page 592.

The disruption to industry during 1919 was the most serious experienced since records of such matters were instituted in 1913. Prior to 1919 the greatest loss in wages occurred in 1917, and amounted to £2,594,808.

Three serious dislocations occurred during the year 1919. The stoppage of work at Broken Hill, in which metalliferous miners and others were involved, was the most prolonged dispute recorded by this Bureau. The mines closed down during May, 1919, and work was not resumed until November, 1920. Over 7,000 workpeople at Broken Hill were out of work, and it is estimated that the loss in wages to employees at the mines at Broken Hill and at the smelters, Port Pirie, exceeded £2,500,000. Seamen and marine engineers were also involved in protracted disputes which caused heavy losses of working days and wages during the year. Detailed particulars of these important disputes have been published in Labour Reports, Nos. 10 and 11.

The more important of the disputes which contributed to the losses during 1920 were the dislocations of work involving marine stewards on interstate vessels; factory engine-drivers and firemen, Melbourne; gas workers, Melbourne; brown-coal miners, Morwell; ironstone quarrymen and others, Iron Knob and Whyalla; and State civil servants, Western Australia. The number of disputes during 1921, while greater than for any of the previous years for which information is given, affected a less number of workpeople and involved less loss in wages than in either 1919 or 1920. The principal disputes in this year were in the coal-mining industry, shipping, building, and sugar-cane cutting.

In 1922 efforts were made by various bodies of workers (particularly in the engineering trades) to secure a permanent working week of 44 hours. The Commonwealth Court of Conciliation and Arbitration had decided upon 48 hours for all industries (with the exception of certain specified trades), and the application of this decision to trades which had been enjoying the 44 hour week resulted in disputes, which, however, in the majority of instances, were unsuccessful.

What threatened to be an extensive dispute occurred in the shearing industry, but information in regard thereto was so indefinite that no reliable record could be made. The trouble arose in connexion with an award of the Commonwealth Court of Conciliation and Arbitration, which fixed the rate for shearing at 35s. per 100 sheep, as against 40s. per 100 prevailing in Queensland. Conflicting reports were published by the employers' and the employees' organizations, but no definite instance was recorded of an actual stoppage of work. Shearing was completed, but how far it was paid for at award or higher rates, and how far it was done by members of the union or by volunteer labour could not be ascertained.

Fuller information in regard to the many important disputes during these years is given in the Labour Reports issued by this Bureau.

It is, of course, obvious that the mere number of disputes cannot by itself be accepted as a proper basis of comparison, nor does the number of workpeople afford a satisfactory basis. A better idea as to the significance and effect of industrial disputes may be obtained from the number of working days lost and the estimated loss in wages.

The position which New South Wales occupies in comparison with the other States is almost entirely due to the prevalence of disputes in connexion with coal-mining, and attention has frequently been drawn to the preponderating influence exercised by these disputes on the total number of industrial disputes. In making any comparison as to the number of disputes in this industrial class in each State, it should be observed that the number of workers engaged in the mining industry is very much larger in New South Wales than in any of the other States.

Apart from these stoppages, the number of disputes in all other industries, whilst still in excess of that for each of the other States, does not compare unfavourably if the number of workpeople in each State is taken into consideration.

In regard to extensive dislocations of industry prior to the institution of systematic inquiries by this Bureau, efforts were made to obtain statistical data relating to the shearers' disputes in 1890, 1891, and 1894, and the maritime dispute in the early part of 1891, but precise information was not obtainable.

5. Duration of Industrial Disputes, 1922.—The following table gives particulars respecting the number of disputes, workpeople directly and indirectly involved, working days lost, and estimated amount of loss in wages respectively, consequent on the cessations of work which were recorded for Australia during the year 1922, classified under the adopted limits of duration :—

INDUSTRIAL DISPUTES—DURATION, AUSTRALIA, 1922.

Limits of Duration.	No. of Disputes.	No. of Workpeople Involved.			Number of Working Days Lost.	Total Estimated Loss in Wages.
		Directly.	Indirectly.	Total.		
1 day and less	155	38,460	6,982	45,442	45,235	50,615
2 days and more than 1 day	57	15,196	1,100	16,296	32,041	35,876
3 days and more than 2 days	41	6,267	1,470	7,737	22,977	24,362
Over 3 days and less than 1 week (6 days)	45	8,841	2,754	11,595	52,936	54,923
1 week and less than 2 weeks	59	18,573	532	19,105	144,581	143,558
2 weeks and less than 4 weeks	43	5,417	1,200	6,617	106,011	101,764
4 weeks and less than 8 weeks	26	2,280	386	2,666	84,838	86,179
8 weeks and over	19	5,229	1,645	6,874	370,066	254,230
Total	445 ^a	100,263	16,069	116,332	858,685	751,507

(a) See footnote (a) on page 592.

Similar figures for the years 1913 to 1921 will be found in previous issues of the Year Book and in the Labour Reports. .

6. Causes of Industrial Disputes, 1914 to 1922(a).—The following table shows the number of disputes, number of workpeople involved, and the total number of working days lost in disputes during the years 1914 to 1922, classified according to principal cause :—

INDUSTRIAL DISPUTES.—CAUSES, AUSTRALIA, 1914 TO 1922.(b)

Causes of Disputes.	1914.	1917.	1918.	1919.	1920.	1921.	1922(b).
NUMBER OF DISPUTES.							
1. Wages—							
(a) For increase.. ..	50	53	54	99	94	19	15
(b) Against decrease ..	3	1	4	2	..	2	18
(c) Other wage questions..	67	69	69	100	106	161	83
2. Hours of Labour—							
(a) For reduction ..	1	2	1	4	16	12	12
(b) Other disputes <i>re</i> hours	13	8	11	5	9	16	2
3. Trades Unionism—							
(a) Against employment of non-unionists ..	13	26	7	19	20	5	6
(b) Other union questions	11	32	19	29	27	22	15
4. Employment of particular Classes or Persons ..	83	90	92	118	135	169	155
5. Working Conditions ..	72	81	34	54	106	162	89
6. Sympathetic ..	3	57	1	6	2	13	8
7. Other Causes ..	21	25	6	24	39	43	41
Total	337	444	298	460	554	624	445(b)

NUMBER OF WORKPEOPLE INVOLVED.

1. Wages—							
(a) For increase.. ..	7,362	7,135	7,095	58,532	41,748	2,659	843
(b) Against decrease ..	534	21	57	667	..	850	4,432
(c) Other wage questions	15,243	18,894	12,737	26,222	21,139	52,704	24,459
2. Hours of Labour—							
(a) For reduction ..	220	1,004	26	578	20,758	2,313	5,935
(b) Other disputes <i>re</i> hours	3,237	2,576	4,214	961	2,137	2,113	124
3. Trades Unionism—							
(a) Against employment of non-unionists ..	5,807	6,182	710	9,001	2,752	1,353	1,072
(b) Other union questions	1,593	17,320	6,673	17,509	7,534	6,607	4,264
4. Employment of particular Classes or Persons ..	14,863	15,445	14,576	21,488	26,163	45,408	36,194
5. Working Conditions ..	17,053	19,021	7,757	11,582	21,204	35,790	27,334
6. Sympathetic ..	675	76,076	200	3,080	1,397	3,251	1,119
7. Other Causes ..	4,462	10,296	2,394	7,971	10,734	12,053	10,556
Total	71,049	173,970	56,439	157,591	155,566	165,101	116,332

NUMBER OF WORKING DAYS LOST.

1. Wages—							
(a) For increase.. ..	99,451	56,083	198,323	5,403,581	793,935	13,731	8,694
(b) Against decrease ..	32,965	42	316	10,013	..	25,700	154,791
(c) Other wage questions	169,847	225,080	97,561	96,118	101,219	192,858	149,129
2. Hours of Labour—							
(a) For reduction ..	9,240	78,016	312	10,372	534,458	13,315	164,794
(b) Other disputes <i>re</i> hours	16,855	62,560	20,551	15,760	37,486	13,260	1,701
3. Trades Unionism—							
(a) Against employment of non-unionists ..	92,720	87,600	21,894	279,804	24,900	17,890	5,485
(b) Other union questions	6,968	572,949	24,341	329,205	21,999	117,199	18,976
4. Employment of particular Classes or Persons ..	64,367	47,297	113,466	87,225	129,215	431,130	198,256
5. Working Conditions ..	584,289	211,971	93,468	32,029	128,967	69,732	123,665
6. Sympathetic ..	2,125	3,239,798	7,200	21,050	72,940	6,150	9,438
7. Other Causes ..	11,568	18,262	3,421	23,069	26,946	55,652	23,756
Total	1,090,395	4,599,658	580,853	6,308,226	1,872,065	956,617	858,685

(a) See footnote *, page 592.

(b) See footnote (a), page 592.

The main causes of industrial disputes are "Wage" questions, "Working Conditions," and "Employment of Particular Classes or Persons." In each of the eight years, 1914 to 1922, with the exception of 1922, the number of dislocations concerning wages exceeded those caused by any other question, and varied between a minimum proportion of 26 per cent. in 1922 and a maximum of 45 per cent. in 1916. The majority of the disputes classified under the heading, "Employment of Particular Classes or Persons," are stoppages of work for the purpose of protesting against the dismissal of certain employees, who, in the opinion of their fellow-workers, have been unfairly treated or victimized. This class of dispute occurs very frequently in the coal-mining industry. The number of disputes over "Trade Union" questions and "Hours of Labour" has represented a fairly uniform proportion of the total number of disputes during the years under review. "Sympathetic" disputes were numerous during the year 1917, but the figures for this year were abnormal, and were largely due to the "time card system" dispute in New South Wales.

7. Results of Industrial Disputes.—The following table shows the number of disputes, number of workpeople involved, and the number of working days lost in disputes throughout Australia during the five years 1918 to 1922, classified according to results :—

**INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO RESULTS.—AUSTRALIA,
1918 TO 1922.(a)**

Year.	No. of Disputes.				Number of Workpeople Involved in Disputes.				Total Number of Working Days Lost by Disputes.			
	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.	In Favour of Workpeople.	In Favour of Employer.	Compromise.	Indefinite.
1918 ..	92	100	93	13	13,780	15,998	23,739	2,922	101,207	177,223	280,045	22,378
1919 ..	154	157	140	9	54,810	43,140	55,445	4,196	2,398,252	406,361	3,483,571	20,042
1920 ..	183	199	168	4	30,399	61,947	62,811	409	180,345	911,156	777,175	3,389
1921 ..	126	274	216	8	25,244	63,380	73,887	2,590	76,381	162,331	714,501	3,404
1922a b	81	268	82	2	18,050	77,785	16,366	81	175,379	383,342	132,615	738

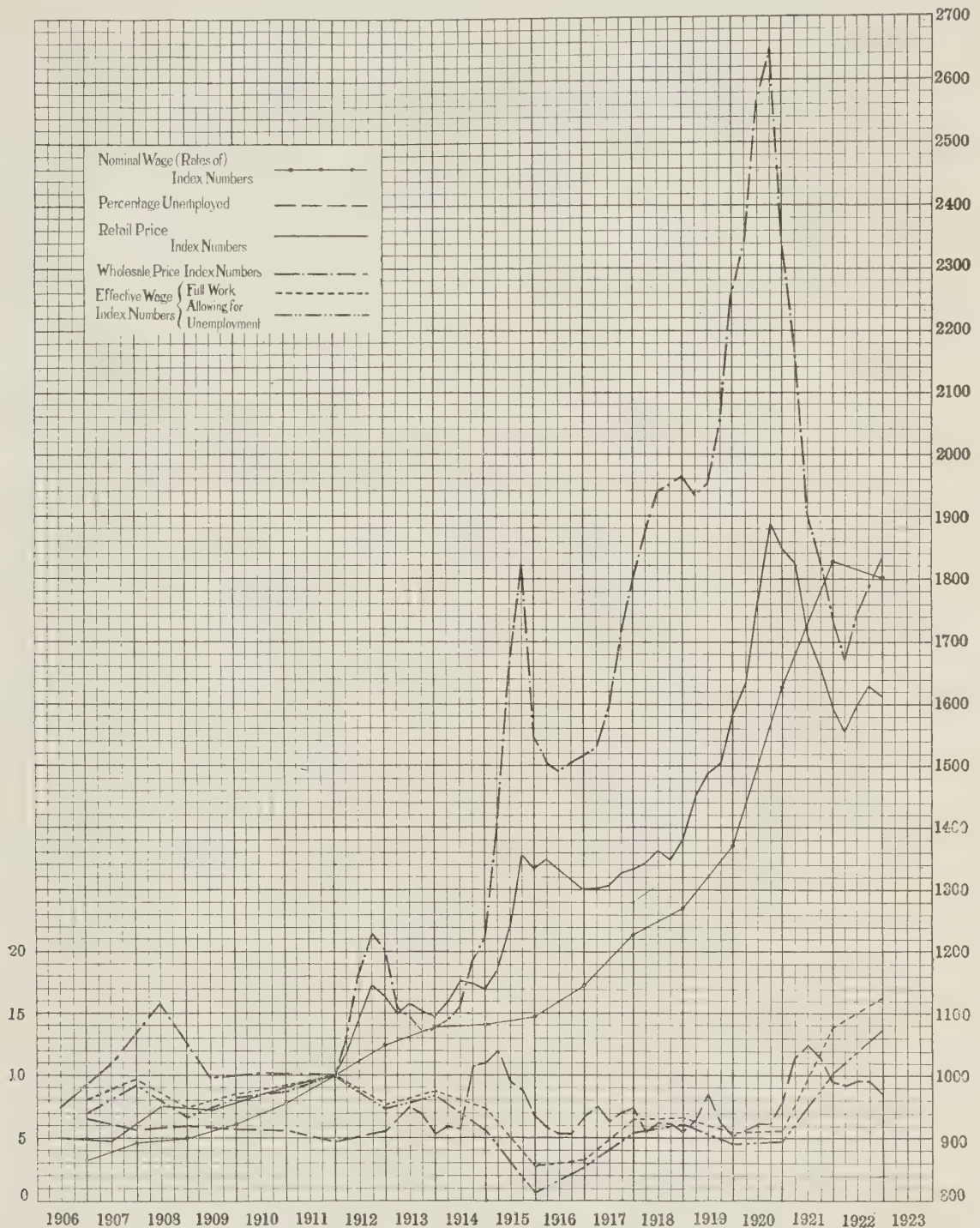
(a) See footnote (a), page 592.

(b) The following particulars of disputes which were incomplete at the 31st December, 1922, should be added to the above figures to effect a balance with those published in the preceding table :—

State.	No. of Disputes.	Workpeople Involved.	Working Days Lost.	Wages Lost.
New South Wales ..	7	3,212	109,271	85,589
Victoria ..	1	23	4,071	2,849
Queensland ..	3	342	14,483	13,640
Western Australia ..	1	473	38,786	32,561
Total ..	12	4,050	166,611	134,639

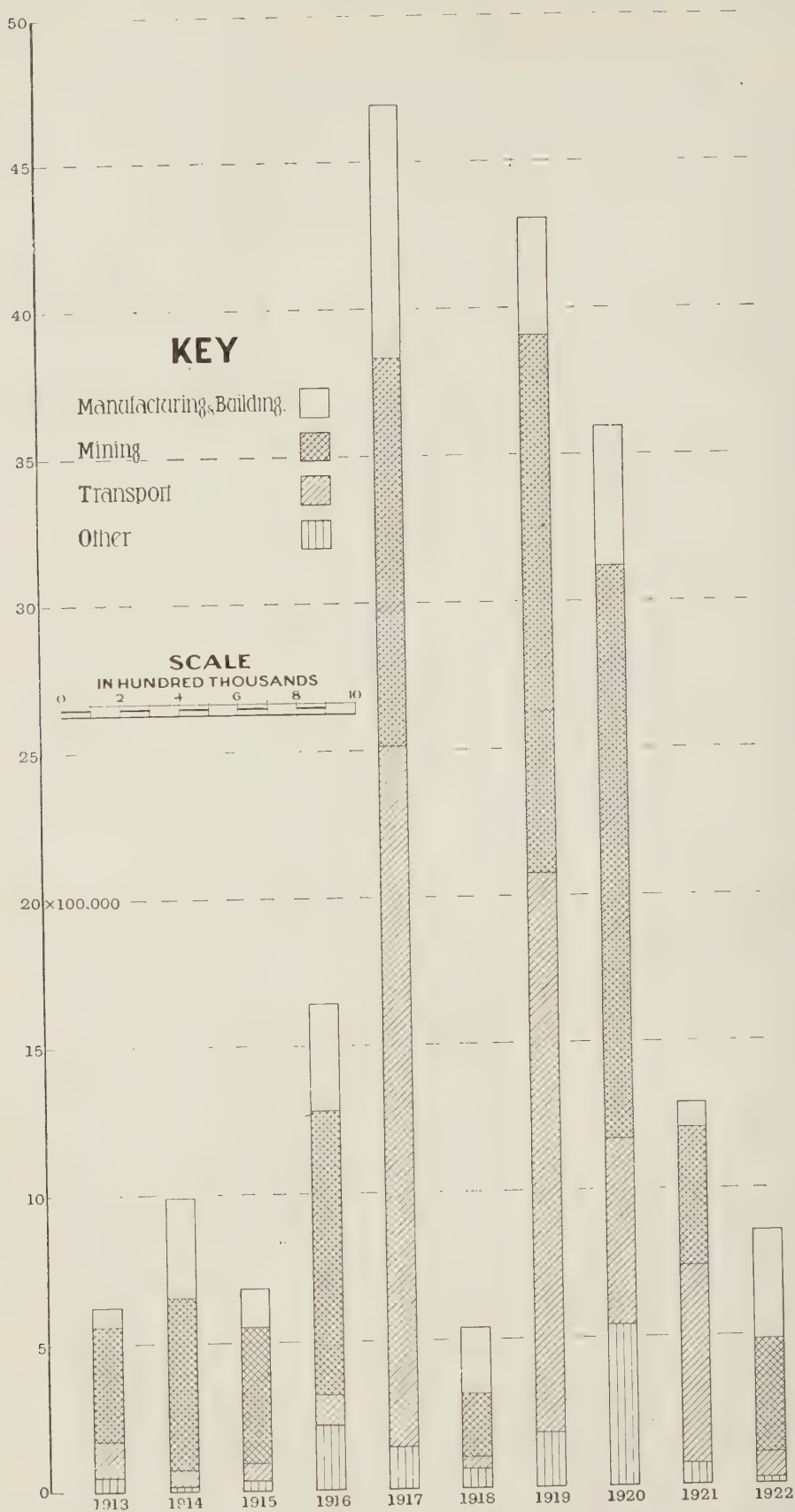
8. Methods of Settlement.—The following tables show for Australia the number of disputes, number of workpeople involved, and number of working days lost in industrial disputes during the years 1914 and 1917 to 1922, classified according to the adopted schedule of methods of settlement :—

RETAIL AND WHOLESALE PRICES, NOMINAL AND EFFECTIVE WAGE INDEX-NUMBERS,
AND PERCENTAGE OF UNEMPLOYED—AUSTRALIA, 1906 TO 1922.



NOTE.—The figures on the left represent the scale for the percentage unemployed according to trade union returns. The figures on the right represent the scale for the several index-numbers, the year 1911 being taken in each case as base (= 1000). Since the end of the year 1911, the Retail Price Index-numbers (weighted average cost of food, groceries, and house rent for the six capital cities), and the Wholesale Price Index-number (Melbourne) are shown each quarter, while unemployment percentages are shown quarterly since the end of the year 1912 only. The other index-numbers since 1913 refer to the average for the whole year, but for purposes of convenience are plotted on the graph as at the end, not the middle, of the year. Retail Price and Wholesale Price Index-numbers show the average level during the whole of each quarter, and they also for convenience are plotted at the end, and not the middle, of each quarter.

INDUSTRIAL DISPUTES.—WORKING DAYS LOST IN INDUSTRIAL GROUPS,
AUSTRALIA, 1913 TO 1922.



EXPLANATION.—The scale refers to working days lost in hundred thousands. Thus, taking the year 1917, and comparing the shaded and blank sections with the scale, it will be observed that about 870,000 working days were lost in Manufacturing and Building, over 1,300,000 in Mining, over 2,300,000 in Transport, and about 150,000 in other industries.

INDUSTRIAL DISPUTES.—METHODS OF SETTLEMENT, AUSTRALIA, 1914 TO 1922.(a)

Methods of Settlement.	1914.	1917.	1918.	1919.	1920.	1921.	1922.(b)
NUMBER OF DISPUTES.							
Negotiations—							
Direct between employers and employees or their representatives	247	234	171	291	380	412	249
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	11	38	21	35	25	65	52
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference	7	12	20	33	33	18	7
By reference to Board or Court ..	17	13	14	5	8	4	7
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference	5	3	8	9	8	11	5
By Filling Places of Workpeople on Strike or Locked Out	16	36	26	22	22	10	11
By Closing-down Establishment Permanently	4	4	8	7	4	2	6
By Other Methods	30	104	30	58	74	102	96
Total	337	444	298	460	554	624	(c)433

NUMBER OF WORKPEOPLE INVOLVED.

Negotiations—							
Direct between employers and employees or their representatives	48,204	49,512	34,680	76,070	101,404	93,912	62,000
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	8,054	23,338	4,155	47,849	6,278	20,775	15,554
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference	770	6,295	2,958	6,926	9,312	11,229	1,222
By reference to Board or Court ..	7,308	2,779	3,392	1,380	1,711	1,083	1,128
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference	205	1,490	3,042	1,997	766	12,037	446
By Filling Places of Workpeople on Strike or Locked Out	629	17,780	1,933	2,202	2,141	334	790
By Closing-down Establishment Permanently	86	434	538	401	182	53	171
By Other Methods	5,793	72,342	5,741	20,766	33,772	25,678	30,971
Total	71,049	173,970	56,439	157,591	155,566	165,101	112,282

NUMBER OF WORKING DAYS LOST.

Negotiations—							
Direct between employers and employees or their representatives	803,799	551,484	222,846	632,269	827,985	245,765	353,336
By intervention or assistance of distinctive third party—not under Commonwealth or State Industrial Act	128,231	863,896	37,444	5,379,655	217,916	156,076	187,164
Under State Industrial Acts—							
By intervention, assistance, or compulsory conference	4,256	159,799	57,559	94,557	69,436	136,735	16,016
By reference to Board or Court ..	120,685	48,352	151,472	8,460	19,236	22,752	13,767
Under Commonwealth Conciliation and Arbitration Act—							
By intervention, assistance, or compulsory conference	1,421	33,396	23,289	74,018	34,205	327,048	8,081
By Filling Places of Workpeople on Strike or Locked Out	4,402	908,596	35,298	46,029	160,562	3,542	11,759
By Closing-down Establishment Permanently	3,646	11,392	4,270	5,737	12,919	538	603
By Other Methods	23,955	2,022,743	48,675	67,501	529,806	64,161	101,348
Total	1,090,395	4,599,658	580,853	6,308,226	1,872,065	956,617	692,074

(a) See footnote *, page 592. (b) See footnote (a), page 592. (c) See footnote (b), page 598.

It will be observed that direct negotiations between employers and employees settled the majority of the disputes. The proportion of disputes so settled ranges between a minimum of 53 per cent. in 1917 and a maximum of 76 per cent. in 1921; in 1922 the proportion was 58 per cent. The number of dislocations settled by compulsory conferences or the intervention and assistance of officials under State or Commonwealth Arbitration Acts has slightly decreased during the period under review. In connexion with the comparatively large number of disputes which are classified as having been settled "By other methods," it must be mentioned that many stoppages of work occur each year, principally at collieries, but the cause for such stoppages is not officially known to the employers or their representatives. Such stoppages usually last for one day, and work is resumed without negotiations for a settlement of the trouble.

§ 9. Apprenticeship.

1. **General.**—Legislation dealing with the question of apprenticeship has been passed by all the State Parliaments. The earliest Act was that passed in 1828 by New South Wales enabling persons holding certain Government positions to take apprentices. It provided for the execution of indentures, and for disputes between masters and apprentices to be heard and settled by two Justices of the Peace. The term of apprenticeship was to be not less than 3 and not to exceed 7 years. Further enactments or amendments in the law relating to apprentices were made in 1834, 1844, 1850, and 1851. Legislation on similar lines was enacted in the other States.

Upon the introduction of Wages Board and Industrial Arbitration legislation the regulation of the terms of apprenticeship was included in the various State Industrial Acts. Thus, in New South Wales, the Industrial Arbitration Amendment Act of 1918 provides for the establishment of a Board of Trade. Included in the activities of this Board are the determination of the occupations and industries in which apprentices shall be employed and the conditions under which such apprentices shall be engaged.

The Factories and Shops Acts of Victoria, under which Wages Boards are appointed, also include provisions governing the employment of apprentices. The Industrial Arbitration Acts of Queensland, the Industrial Code of South Australia, the Industrial Arbitration Acts of Western Australia, and the Wages Board Act of Tasmania all contain provisions for the regulation of apprenticeship. Recently the Board of Trade, New South Wales, held an inquiry into the question of apprenticeship and published two extensive reports, containing recommendations for the future regulation of apprenticeship. In Victoria, a conference of representatives of the Government, Factories Department, Education Department, Trade Unions, and Employers' Organizations met at the end of 1921, and presented its report on the 28th August, 1922.

The New South Wales Board of Trade has published a scheme of regulations for apprenticeship. These regulations provide that every contract for engagement of a minor must be made in writing and lodged with the Board for registration. Any employer, partnership, or association of individuals may be the master of an apprentice. Minors may be employed on probation for 3 months. The term of apprenticeship is to be 5 years beginning at or before the age of 17. Every apprentice must attend a trade school for not less than 5 hours per week over a period of not less than 3 years. When under 16 years of age this attendance is to be wholly in the employer's time, and when over 17 years of age, 3 of the 5 hours are to be in the employee's time. Other provisions refer to wage rates for different years of apprenticeship and provide for a modification of regulations by the Board. These regulations have not been given effect to, except in the case of the bricklaying industry.

The Victorian Conference on apprenticeship recommended the appointment of an Apprenticeship Commission to carry out the scheme as outlined by the Conference. The proposed Commission was to consist of one representative of the Education Department, Technical Schools, and the Department of Labour respectively, three representatives of

employers, and three representatives of employees, from which Central Trade Committees would be appointed to control apprenticeship in various industrial groups of allied trades. These Trade Committees and the Apprenticeship Commission would be charged with the duty of regulating wages and conditions of apprentices, determining the nature of the technical training necessary, the proper proportion of apprentices and other cognate matters.

The Victorian Government has not yet introduced legislation to give effect to these recommendations, but it is considered probable that such legislation will be introduced in the near future.

2. Period of Apprenticeship.—The period of apprenticeship is fixed in the Awards of the various industrial tribunals, but there are considerable differences in the various industries. The following table gives for each State the number of Awards in which periods are fixed and the number of such Awards in which the period falls within the limits specified :—

APPRENTICESHIP.—PERIODS FIXED BY AWARDS.

Period.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth. Court.	Total.
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MALES.

No period fixed (a)	..	97	..	68	22	12	19	3	221
2½ years	1	1
3 „	2	12	4	..	1	3	2	24
4 „	9	26	1	6	7	4	2	55
5 „ ..	..	59	48	22	27	18	17	15	206
5½ „ ..	..	3	..	..	..	..	..	..	3
6 „ ..	..	17	45	4	18	5	5	4	98
7 „ ..	..	2	5	..	2	..	..	1	10
8 „ ..	..	..	1	..	..	..	..	..	1

FEMALES.

6 months ..	..	..	..	..	..	..	..	2	2
1 year ..	..	1	..	..	..	..	..	..	1
2 years ..	..	..	2	..	1	..	..	..	3
3 „ ..	..	1	7	2	2	1	1	..	14
4 „ ..	..	6	22	2	2	1	2	6	41
5 „ ..	..	2	11	1	5	1	..	1	21
6 „ ..	..	2	11	..	..	..	..	..	13
7 „ ..	..	..	..	..	1	..	..	..	1

(a) Includes Awards in which apprenticeship is provided for, but in which no period is specified, and applies to both males and females.

From the above table it appears that where periods are specified in the case of males the majority of the awards provides for a 5 years' apprenticeship, while in the case of females the majority provides for a 4 years' apprenticeship.

3. Proportion of Apprentices to Journeymen and Journeywomen.—In the Awards of the Industrial Tribunals in which apprenticeship is provided for, the proportion of apprentices to journeymen and journeywomen is generally fixed. The following table

gives for males and females the number of Awards in which the proportion is in the ratios specified :—

APPRENTICES.—PROPORTION TO JOURNEYMEN AND JOURNEYWOMEN.

Proportion.	N.S.W.	Vic.	Q'd.	S.A.	W.A.	Tas.	C'wlth. Court.	Total.
MALES.								
1 to 1	16	3	11	1	..	15	1	47
1 to 2	21	19	13	4	12	1	2	72
1 to 3	30	100	8	12	7	7	5	169
1 to 4	18	..	4	5	8	..	2	37
1 to 5	6	..	..	..	1	..	2	9
1 to 6 .. .. .	..	..	..	1	1	..	1	3
Other proportions ..	7	9	4	2	..	..	..	22
FEMALES.								
1 to 1	3	9	1	1	..	2	2	18
1 to 2	2	4	1	..	1	..	..	8
1 to 3	2	38	..	..	..	..	..	40
Other proportions ..	4	3	2	1	..	..	2	12

In the case of both males and females the predominant proportion of apprentices is 1 to 3 adults.

Provisions are made in the Awards with regard to improvers, also for the rate of wages for each year of service for both apprentices and improvers.

It is proposed to investigate this matter further, and to publish a comprehensive report thereon in the next issue of the Labour Report published by this Bureau.

§ 10. Retail Prices and House Rents.

1. Introduction.—(i) *General.* In Labour Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. A detailed examination of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes. In Labour Reports Nos. 2, 5, 6, 7, 8, 9, 10, 11, 12, and 13, results of further investigations were included, and in Labour Bulletins Nos. 1 to 18, and in Quarterly Summaries of Statistics, Nos. 70 to 90, information was incorporated regarding variations in retail and wholesale prices, house rent, and purchasing-power of money up to the end of 1922.

(ii) *Computation of Index-Numbers.* It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the “aggregate expenditure” method. The first process is, of course, to work out the average price of each commodity included, and numbers (called “mass-units”) representing the *relative* extent to which each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding “mass-unit” represents, therefore, the relative total expenditure on that commodity in that year *on the basis of the adopted regimen*. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding

"mass-unit," a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any selected year as "base," that is, making the expenditure in that year equal to 1,000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained. Numerical examples of the technique and methods adopted for the computation of index-numbers were given in Report No. 2 (pp. 44 and 45), and in Report No. 9 Appendixes I. to IV., pp. 174 to 229.

2. Scope of Investigation.—(i) *General.* It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz. :—

- (a) Variations in the *purchasing-power* of money, and
- (b) Variations in the *standard of living*.

In Report No. 2, attention was drawn to the fact that the second element (b) can be limited, at any rate to some extent, by the exercise of self-denial and thrift, and that such limitation is at the disposal of each individual; the former (a) is not subject to this possibility. Thus, from this aspect, social economics are concerned *primarily* with an accurate estimation of variations in the purchasing-power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands the selection of a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption. The quantities in this list being kept constant, the cost of the whole group must then be ascertained. In this way a comparison may be made of the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the "aggregate expenditure" method explained above.

As explained in Report No. 1, special steps were taken to conduct the investigation back as far as 1901 for the capital cities only. The collection of current monthly returns as to prices, and of quarterly returns of house rents commenced in 30 of the more important towns of Australia in January, 1912.

(ii) *Items Included.* The 47 items of expenditure included are divided into four groups, viz. :—(i) groceries and bread, (ii) dairy produce, (iii) meat, and (iv) house rent. These items cover about 60 per cent. of the total expenditure of a normal family. There are very cogent reasons for the restriction of the inquiries to the items mentioned. If the comparisons made are to be satisfactory, no confusion must arise between changes in the standard of living and changes arising from a variation of the purchasing-power of money. In order to avoid such confusion the items selected are such as are sensibly identical and identifiable in the various localities. In Labour Report No. 12 (page 25) a tabular statement was given furnishing particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units showing the relative extent to which each item is used or consumed.

As the result of a recommendation made by the Royal Commission on the Basic Wage, the Government authorized the Bureau to extend its investigations to cover the whole of the ordinary expenditure of a household, and in paragraph 12 of this Chapter, index-numbers are given showing the variation in the cost of the whole of the items of household expenditure.

3. Variations in Index-Numbers for Retail Prices and House Rents, Capital Cities, 1901 to 1922.—(i) *General.* In Labour Reports and Bulletins, and in recent issues of the Quarterly Summaries of Statistics, index-numbers were given for each of the four groups and for all groups combined for each capital city since 1901, the expenditure in 1911 being taken in each case as base (=1,000). In this sub-section summarized results only are given, firstly, for food and groceries; secondly, for house rent; and thirdly, for all groups combined—the weighted average expenditure for all capital cities in 1911 being taken in each case as base (=1,000). The index-numbers in each table are fully comparable with one another since they show not only the variations from year to year in each capital, but also the relative cost as between the cities.

(ii) *Food and Groceries.* The index-numbers thus computed for the three groups comprising groceries and food are shown in the following table:—

RETAIL PRICE INDEX-NUMBERS, FOOD AND GROCERIES.—CAPITAL CITIES, 1901 TO 1922.

City.	1901.	1911.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Sydney ..	917	989	1,131	1,156	1,396	1,520	1,540	1,549	1,783	2,148	1,898	1,703
Melbourne ..	965	935	1,024	1,091	1,411	1,462	1,412	1,416	1,620	2,056	1,901	1,644
Brisbane ..	965	1,018	1,042	1,078	1,373	1,426	1,406	1,495	1,762	2,052	1,812	1,608
Adelaide ..	1,028	1,020	1,119	1,215	1,487	1,532	1,445	1,554	1,719	2,132	1,906	1,723
Perth ..	1,184	1,346	1,267	1,302	1,483	1,542	1,505	1,486	1,772	2,050	1,995	1,776
Hobart ..	1,011	1,058	1,164	1,212	1,445	1,523	1,544	1,635	1,748	2,162	2,025	1,794
Weighted Average(a) ..	972	1,000	1,095	1,144	1,416	1,495	1,472	1,514	1,716	2,101	1,902	1,684

(a) For all capital cities.

The figures quoted are directly comparable in every respect; thus, the same quantity of food and groceries, which cost £1,000 in the capital cities considered as a whole in 1911, would have cost £917 in Sydney in 1901, £1,346 in Perth in 1911, or £1,644 in Melbourne in 1922.

In 1921 and 1922 decreases were experienced in all the capitals. Comparing the results for 1922 with those for 1911, the extent by which prices increased varied from 77 per cent. in Hobart to 50 per cent. in Perth. Prices, however, were abnormally high in Perth in 1911.

(iii) *Housing.* The following table gives index-numbers computed for the weighted average house rent in each of the capital cities from 1901 to 1922, taking the average rent for the six capitals in 1911 as the base (=1,000). The average rent has been obtained for each city separately by multiplying the average predominant rent for each class of house (i.e., houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7 rooms) by a number ("weight") representing the relative number of houses of that class in the particular city. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses. The number of houses in each class for each city was obtained from the results of the 1911 census. It should be observed, therefore, that these index-numbers are based on the weighted average rents for all houses, and that they do not refer to any particular class of house. The actual predominant rents for each class were given in appendices to Labour Reports Nos. 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, and 13, and an examination of these figures shows that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table.

INDEX-NUMBERS.—HOUSING, CAPITAL CITIES, 1901 TO 1922.

City.	1901.	1911.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Sydney ..	858	1,090	1,246	1,279	1,220	1,212	1,215	1,252	1,289	1,415	1,474	1,535
Melbourne ..	733	970	1,089	1,126	1,085	1,089	1,124	1,180	1,283	1,405	1,502	1,597
Brisbane ..	488	767	863	882	859	847	859	905	983	1,061	1,079	1,206
Adelaide ..	629	1,112	1,125	1,040	932	930	959	1,022	1,108	1,216	1,289	1,360
Perth ..	801	810	928	914	848	869	874	885	916	996	1,055	1,092
Hobart ..	667	805	887	914	928	928	951	956	1,134	1,373	1,440	1,445
Weighted Average(a) ..	751	1,000	1,118	1,135	1,081	1,081	1,098	1,143	1,215	1,333	1,404	1,480

(a) For all capital cities.

NOTE.—The above figures are directly comparable in every respect.

A striking feature in the movements of rents, as shown by the weighted average index-numbers given in the foregoing table, is the decline registered in the years 1915 to 1917. This fall was probably, in some measure, due to the circumstance that wives and other dependents of soldiers gave up their separate establishments and shared houses or apartments, thus reducing the demand for house accommodation. The Government regulations forbidding the increase of rents of houses tenanted by soldiers' dependents would, also, have a restraining influence on any tendency for rents to rise. In 1918 rents were again at the 1914 level, and in 1919, 1920, 1921, and 1922 fairly substantial increases occurred.

(iv) *Food, Groceries, and Housing combined.* The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as the purchasing-power of money is concerned. The following table shows the index-numbers for groceries, food, and house rent for each capital city, the weighted average cost for the six capitals in 1911 being taken as base (=1,000) :—

RETAIL PRICE INDEX-NUMBERS(a).—FOOD, GROCERIES, AND HOUSING.—
CAPITAL CITIES, 1901 TO 1922.

City.	1901.	1911.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Sydney ..	893	1,031	1,178	1,206	1,323	1,394	1,406	1,427	1,580	1,847	1,724	1,634
Melbourne ..	870	950	1,051	1,105	1,277	1,309	1,294	1,349	1,481	1,788	1,737	1,625
Brisbane ..	769	915	969	997	1,162	1,188	1,181	1,252	1,442	1,645	1,511	1,442
Adelaide ..	864	1,058	1,121	1,143	1,259	1,285	1,245	1,335	1,468	1,756	1,653	1,574
Perth ..	1,027	1,126	1,128	1,143	1,222	1,266	1,246	1,239	1,420	1,617	1,609	1,495
Hobart ..	869	954	1,050	1,090	1,233	1,278	1,301	1,356	1,496	1,837	1,785	1,651
Weighted Average(b) ..	880	1,000	1,104	1,140	1,278	1,324	1,318	1,362	1,510	1,785	1,697	1,600

(a) As the price index-number increases, the purchasing-power of money diminishes.

(b) For all capital cities.

NOTE.—The above figures are directly comparable in every respect.

The abnormal movements of the prices of food and groceries and of house rents during the war years present features of particular interest. On the basis of the weighted averages, prices of food and groceries rose in 1915 by about 24 per cent. over 1914, and continued on a somewhat higher level, whereas the weighted average for housing fell in 1915 by 4.8 per cent., and remained below the 1913 level until 1918. The combination of housing with prices of food and groceries has had the effect of considerably modifying the index of prices, or, in other words, the purchasing-power of money, as compared with the similar index based on food and groceries only. In 1918, 1919, and 1920 there were increases in prices of food and groceries and housing, the combined results for 1920 being an increase of 18.2 per cent. over 1919, 56.6 per cent. over 1914, and 78.5 per cent. over 1911. The increase in the index-number between 1920 and 1914 varied between the capital cities from 41 per cent. in Perth to 69 per cent. in Hobart, while between 1920 and 1911 it varied between 44 per cent. in Perth and 93 per cent. in Hobart. The decrease in cost in 1921 was very slight in Perth compared with the decrease in the remaining cities. In 1922 there was a further decline in the combined cost of food, groceries, and housing in all the cities, the weighted average index-number being 1,600 as compared with 1,697 in 1921.

4. *Retail Price Index-numbers in Terms of Currency.*—The tables in sub-section 3 give the relative cost in the six capital cities of food, groceries, and housing from 1901 to 1922 in the form of index-numbers. The figures have been converted into a monetary basis in the next table, and show the sums which would have to be paid in each city and in each year in order to purchase such relative quantities (indicated by the mass-units) of the several commodities, and to pay such sums for housing as would in the aggregate cost £1, according to the weighted average prices and rents in the six capitals in 1911.

RETAIL PRICES.—AMOUNTS NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1923 (1st QUARTER) TO PURCHASE IN EACH CAPITAL CITY WHAT WOULD COST ON THE AVERAGE £1 in 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Cities.
FOOD AND GROCERIES (46 COMMODITIES).							
1901	18 4	19 4	19 4	20 7	23 8	20 3	19 4
1907	18 9	18 6	18 11	19 0	23 11	20 2	19 1
1911	19 9	18 8	20 4	20 5	26 11	21 2	20 0
1918	31 0	29 4	29 11	31 1	29 9	32 8	30 3
1919	35 8	32 5	35 3	34 5	35 5	35 0	34 4
1920	43 0	41 1	41 1	42 8	41 0	43 3	42 0
1921	38 0	38 0	36 3	38 1	40 0	40 6	38 0
1922	34 1	32 11	32 2	34 6	35 6	35 11	33 8
1922 { 1st Quarter ..	32 10	31 6	32 3	33 5	34 9	35 10	32 7
1922 { 2nd " ..	33 6	33 0	31 11	35 7	36 7	36 5	33 8
1922 { 3rd " ..	35 1	34 0	32 3	35 1	36 3	36 2	34 7
1922 { 4th " ..	34 9	33 0	32 2	33 10	34 6	35 1	33 10
1923 1st	34 2	32 9	32 4	34 1	34 9	35 6	33 7

HOUSE RENT (WEIGHTED AVERAGE ALL HOUSES).

1901	17 3	14 8	9 9	12 7	16 0	13 4	15 1
1907	18 4	16 1	11 6	16 3	13 8	14 2	16 4
1911	21 10	19 5	15 4	22 3	16 3	16 1	20 0
1918	25 0	23 7	18 1	20 5	17 8	19 1	22 10
1919	25 9	25 8	19 8	22 2	18 4	22 8	24 4
1920	28 4	28 1	21 3	24 4	19 11	27 5	26 8
1921	29 6	30 0	21 7	25 9	21 0	28 10	28 1
1922	30 8	31 11	24 1	27 2	21 10	28 11	29 7
1922 { 1st Quarter ..	30 3	31 1	23 4	26 10	21 7	28 4	29 0
1922 { 2nd " ..	30 8	31 11	24 1	27 0	21 10	29 0	29 7
1922 { 3rd " ..	30 11	32 2	24 5	27 3	21 10	29 0	29 9
1922 { 4th " ..	31 0	32 8	24 7	27 9	22 0	29 3	30 1
1923 1st	31 8	32 9	24 11	28 6	22 5	30 5	30 4

FOOD, GROCERIES, AND HOUSE RENT COMBINED.

1901	17 10	17 5	15 5	17 3	20 6	17 5	17 7
1907	18 6	17 6	15 11	17 11	19 9	17 9	17 11
1911	20 7	19 0	18 4	21 2	22 6	19 1	20 0
1918	28 6	27 0	25 1	26 8	24 9	27 1	27 3
1919	31 7	29 7	28 10	29 4	28 5	29 11	30 2
1920	36 11	35 9	32 11	35 1	32 4	36 9	35 8
1921	34 6	34 10	30 3	33 1	32 2	35 8	33 11
1922	32 8	32 6	28 10	31 6	29 11	33 0	32 0
1922 { 1st Quarter ..	31 9	31 4	28 7	30 8	29 4	32 9	31 1
1922 { 2nd " ..	32 4	32 7	28 8	32 1	30 6	33 4	32 0
1922 { 3rd " ..	33 4	33 2	29 1	31 11	30 4	33 3	32 7
1922 { 4th " ..	33 3	32 10	29 1	31 4	29 4	32 9	32 3
1923 1st	33 2	32 9	29 2	31 10	29 8	33 5	32 3

5. Variations in Index-numbers, Retail Prices and Housing, Thirty Australian Towns, 1922.—The index-numbers given in the preceding paragraphs show changes in the cost of food, groceries, and house rent separately for each capital city during the years 1901 to 1922. The figures given in the next table show the relative cost of food and groceries, and of housing in 1922 in the thirty towns for which particulars are now collected. The weighted aggregate expenditure for the six capitals for the year 1911 has been taken as base and made equal to 1,000, hence the columns are comparable both horizontally and vertically. The index-numbers in the last column are the same as in previous tables where the period and town are comparable.

INDEX-NUMBERS.—FOOD AND GROCERIES AND HOUSING, THIRTY TOWNS, 1922.

(NOTE.—Weighted Average Cost all Groups, Capital Cities, 1911, taken as a base = 1,000.)

TOWN.	Food and Groceries.	HOUSING.				FOOD, GROCERIES, AND HOUSING.			
		Four-roomed Houses.	Five-roomed Houses.	Six-roomed Houses.	All Houses.	Four-roomed Houses.	Five-roomed Houses.	Six-roomed Houses.	All Houses.
NEW SOUTH WALES—									
Sydney	1,003	513	592	684	631	1,516	1,595	1,687	1,634
Newcastle	1,005	400	558	690	540	1,405	1,563	1,695	1,545
Broken Hill (a) ..	1,046	281	352	438	300	1,327	1,398	1,484	1,346
Goulburn	996	403	520	637	575	1,399	1,516	1,633	1,571
Bathurst	962	247	368	460	390	1,209	1,330	1,422	1,352
Weighted Average ..	1,004	489	576	671	606	1,493	1,580	1,675	1,610
VICTORIA—									
Melbourne	969	457	589	771	656	1,426	1,558	1,740	1,625
Ballarat	974	229	339	444	402	1,203	1,313	1,418	1,376
Bendigo	972	289	378	500	412	1,261	1,350	1,472	1,384
Geelong	967	353	454	588	507	1,320	1,421	1,555	1,474
Warrnambool.. ..	937	241	495	594	496	1,278	1,432	1,531	1,433
Weighted Average ..	969	424	550	720	614	1,393	1,519	1,689	1,583
QUEENSLAND—									
Brisbane	947	324	429	532	495	1,271	1,376	1,509	1,442
Toowoomba	907	256	330	428	410	1,163	1,227	1,335	1,317
Rockhampton	952	243	286	394	361	1,195	1,238	1,346	1,313
Charters Towers ..	1,000	254	319	408	312	1,254	1,319	1,408	1,312
Warwick	930	264	325	434	392	1,194	1,255	1,364	1,322
Weighted Average ..	948	301	392	515	455	1,249	1,340	1,463	1,403
SOUTH AUSTRALIA—									
Adelaide	1,015	417	553	685	559	1,432	1,568	1,700	1,574
Moonta, etc.	1,008	268	363	427	350	1,276	1,371	1,435	1,358
Port Pirie (a)	1,016	318	413	496	385	1,334	1,429	1,512	1,401
Mt. Gambier	953	235	303	377	312	1,193	1,261	1,335	1,270
Peterborough	1,038	292	384	446	380	1,330	1,422	1,484	1,418
Weighted Average ..	1,013	397	526	649	530	1,410	1,539	1,662	1,543
WESTERN AUSTRALIA—									
Perth, etc.	1,046	386	483	568	449	1,432	1,529	1,614	1,495
Kalgoorlie, etc. ..	1,175	347	417	487	240	1,522	1,592	1,662	1,515
Mid. Junction, etc. ..	1,094	337	423	518	398	1,428	1,514	1,609	1,489
Bunbury	1,093	340	439	505	339	1,433	1,532	1,598	1,432
Geraldton	1,084	400	490	577	381	1,484	1,574	1,661	1,465
Weighted Average ..	1,077	375	465	547	419	1,452	1,542	1,624	1,496
TASMANIA—									
Hobart	1,057	397	586	711	594	1,454	1,643	1,768	1,651
Launceston	1,007	352	502	635	532	1,359	1,509	1,642	1,539
Zeehan	1,149	157	201	271	156	1,306	1,350	1,420	1,305
Beaconsfield	997	75	97	138	95	1,072	1,094	1,135	1,092
Queenstown	1,085	263	342	369	256	1,348	1,427	1,454	1,341
Weighted Average ..	1,045	350	506	621	512	1,395	1,551	1,663	1,557
Australia, Weighted average, 30 Towns ..	994	426	534	660	570	1,420	1,528	1,654	1,564

(a) See remarks on page 48 of Labour Report No. 12, with reference to house rents.

§ 11. Retail Price Index-Numbers, 150 Towns.

1. **General.**—To supplement the information collected each month for the 30 towns specified in the preceding paragraph, a special investigation was initiated in November, 1913, into retail price index-numbers in 70 additional towns. This investigation was repeated in November, 1914, and again in November, 1915, when the number of additional towns was increased to 120, and it is intended to carry it out in that month each year, thus making information available annually for 150 towns. The results of the first investigation were published in Labour Bulletin No. 5 (Section IV., pages 26

to 33), where some description was given of the methods adopted in making the investigation and in computing the index-numbers. The results of the succeeding yearly investigations have appeared in the Labour Bulletins and Reports of this Bureau.

2. Detailed Results, 1920 to 1922.—The results of the investigation made in November, 1922, are set out in the following tables. The aggregate expenditure on food and groceries separately is shown in the form of index-numbers for each year in column A. In Columns B and C the corresponding aggregate expenditure on food, groceries and rent of 4 rooms, and food, groceries, and rent of 5 rooms are shown for each year for each individual town. The index-number 1,525 represents the weighted average expenditure in 150 towns on food, groceries, and rent of 5-roomed houses; 1,415 represents the average weighted expenditure on food, groceries, and rent of 4-roomed houses in November, 1922. Similarly, in column A, the index-number 998 represents the relative weighted average expenditure on food and groceries only for November, 1922. The figures given in the table are comparable throughout. Thus, taking the average weighted expenditure for all 150 towns on food, groceries, and rent of 5-roomed houses as equal to 1,525, the expenditure on the same items in Melbourne is 1,570, while if 4-roomed houses were substituted for 5-roomed the expenditure in Melbourne would be represented by 1,431.

A change has been made in the basis on which the index-numbers in this table are computed. Previously, the weighted average expenditure on food, groceries, and rent of 5-roomed houses for the 150 towns in each year was taken as base. In the tables on the following pages the same basis is taken as in the case of the tables referring to 30 towns and 6 capital cities given in the preceding section, *i.e.*, the weighted average expenditure on food, groceries, and housing accommodation in the 6 capital cities in 1911 is made equal to 1,000.

INDEX-NUMBERS.—COST OF FOOD, GROCERIES AND HOUSING IN 150 TOWNS FOR NOVEMBER, 1920, 1921, AND 1922 COMPARED WITH THE WEIGHTED AVERAGE COST OF FOOD, GROCERIES, AND RENT FOR ALL HOUSES IN THE SIX CAPITAL CITIES IN 1911 AS BASE (=1000).

State and Town.	1920.			1921.			1922.		
	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
NEW SOUTH WALES—									
Sydney	1,291	1,772	1,853	1,015	1,506	1,589	1,034	1,553	1,641
Newcastle	1,330	1,707	1,868	1,029	1,408	1,574	1,008	1,419	1,574
Broken Hill	1,504	1,785	1,857	1,023	1,305	1,376	1,050	1,331	1,402
Goulburn	1,347	1,690	1,793	1,001	1,373	1,490	986	1,409	1,527
Bathurst	1,347	1,594	1,689	985	1,232	1,328	940	1,187	1,309
Adelong	1,319	1,484	1,533	1,035	1,196	1,235	1,046	1,230	1,283
Albury	1,293	1,722	1,815	1,003	1,431	1,521	986	1,519	1,594
Armidale	1,306	1,649	1,742	1,031	1,314	1,411	974	1,332	1,404
Bega	1,318	1,568	1,663	1,073	1,300	1,398	983	1,259	1,358
Bourke	1,375	1,533	1,585	1,066	1,211	1,277	1,055	1,232	1,285
Bowral	1,332	1,684	1,766	1,060	1,461	1,524	1,061	1,495	1,594
Casino	1,264	1,540	1,659	1,089	1,431	1,516	1,011	1,373	1,439
Cobar	1,391	1,489	1,522	1,133	1,232	1,265	1,043	1,141	1,174
Cooma	1,427	1,707	1,773	1,101	1,393	1,509	1,006	1,292	1,390
Coonamble	1,413	1,720	1,808	1,049	1,365	1,474	1,045	1,352	1,435
Cootamundra	1,412	1,805	1,916	1,053	1,472	1,562	921	1,337	1,440
Corrimal	1,356	1,600	1,652	1,052	1,328	1,387	1,013	1,309	1,381
Cowra	1,250	1,593	1,731	967	1,312	1,434	974	1,372	1,484
Deniliquin	1,360	1,693	1,697	997	1,298	1,367	1,008	1,309	1,378
Dubbo	1,364	1,751	1,876	1,045	1,426	1,557	1,018	1,445	1,542
Forbes	1,331	1,630	1,745	1,016	1,385	1,477	1,014	1,298	1,569
Glen Innes	1,225	1,549	1,637	958	1,285	1,384	957	1,266	1,400
Grafton	1,341	1,600	1,692	1,070	1,360	1,455	1,006	1,359	1,478
Grenfell	1,326	1,672	1,804	1,014	1,422	1,560	977	1,444	1,569
Gunnedah	1,335	1,651	1,723	1,024	1,320	1,432	990	1,296	1,358
Hay	1,381	1,631	1,748	1,066	1,342	1,476	1,004	1,280	1,405

INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 150 TOWNS, ETC.—*continued.*

State and Town.	1920.			1921.			1922.		
	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
NEW SOUTH WALES—<i>continued</i>—									
Inverell	1,365	1,704	1,768	1,044	1,395	1,463	1,001	1,363	1,407
Junee	1,303	1,659	1,744	1,042	1,453	1,555	991	1,418	1,517
Katoomba	1,349	1,777	1,895	1,110	1,631	1,752	1,060	1,584	1,371
Kempsey	1,269	1,550	1,651	1,042	1,421	1,519	961	1,290	1,427
Lismore	1,290	1,634	1,738	1,110	1,453	1,574	1,047	1,402	1,563
Lithgow	1,315	1,655	1,729	1,035	1,416	1,486	1,018	1,355	1,472
Maitland	1,314	1,624	1,663	1,001	1,349	1,415	994	1,350	1,402
Moree	1,429	1,785	1,890	1,073	1,395	1,481	1,079	1,487	1,605
Moss Vale	1,360	1,778	1,887	1,026	1,470	1,569	999	1,394	1,559
Mudgee	1,311	1,651	1,719	1,031	1,411	1,483	995	1,414	1,504
Narrabri	1,324	1,676	1,758	1,036	1,370	1,442	992	1,292	1,395
Nowra	1,369	1,698	1,764	1,073	1,402	1,468	1,052	1,578	1,657
Orange	1,259	1,542	1,691	991	1,318	1,411	955	1,307	1,410
Parkes	1,318	1,670	1,778	1,019	1,420	1,503	1,000	1,434	1,559
Queanbeyan	1,382	1,652	1,709	1,044	1,343	1,395	1,014	1,376	1,458
Tamworth	1,277	1,603	1,700	952	1,383	1,498	921	1,339	1,497
Temora	1,369	1,731	1,797	1,062	1,424	1,523	1,006	1,467	1,532
Wagga Wagga	1,243	1,594	1,679	986	1,385	1,447	951	1,350	1,477
Wellington	1,268	1,553	1,661	1,032	1,319	1,412	944	1,226	1,313
Wollongong	1,339	1,678	1,734	1,051	1,387	1,449	1,018	1,399	1,465
Wyalong	1,364	1,625	1,725	1,110	1,389	1,472	983	1,329	1,445
Yass	1,476	1,797	1,867	1,093	1,411	1,483	1,069	1,385	1,449
Young	1,295	1,618	1,703	1,014	1,310	1,387	950	1,306	1,408
Weighted Average for State	1,308	1,740	1,828	1,020	1,463	1,553	1,024	1,493	1,589
VICTORIA—									
Melbourne	1,285	1,707	1,837	972	1,418	1,543	967	1,431	1,570
Ballarat	1,305	1,508	1,596	977	1,178	1,284	976	1,217	1,320
Bendigo	1,245	1,487	1,576	968	1,710	1,315	977	1,284	1,381
Geelong	1,238	1,552	1,652	991	1,330	1,432	959	1,322	1,439
Warrnambool	1,322	1,654	1,765	999	1,335	1,484	932	1,273	1,431
Ararat	1,355	1,640	1,761	1,084	1,327	1,426	1,002	1,303	1,395
Bairnsdale	1,322	1,607	1,728	1,048	1,377	1,504	1,009	1,371	1,494
Beechworth	1,335	1,532	1,589	979	1,196	1,262	996	1,223	1,275
Benalla	1,283	1,566	1,629	1,004	1,304	1,406	947	1,276	1,385
Bright	1,326	1,497	1,563	1,077	1,258	1,307	1,052	1,230	1,305
Camperdown	1,258	1,557	1,646	982	1,324	1,426	963	1,339	1,539
Castlemaine	1,333	1,547	1,658	1,001	1,241	1,360	997	1,280	1,375
Colac	1,332	1,676	1,743	1,028	1,489	1,604	973	1,500	1,582
Creswick	1,310	1,406	1,445	970	1,075	1,121	921	1,053	1,092
Daylesford	1,332	1,510	1,582	1,013	1,221	1,329	995	1,247	1,329
Dunolly	1,183	1,334	1,361	939	1,058	1,097	934	1,092	1,131
Echuca	1,346	1,595	1,676	1,020	1,260	1,365	973	1,235	1,327
Euroa	1,320	1,553	1,570	982	1,226	1,259	1,011	1,243	1,296
Hamilton	1,292	1,616	1,698	1,050	1,395	1,487	1,018	1,402	1,534
Horsham	1,354	1,663	1,782	1,053	1,458	1,623	987	1,417	1,536
Korumburra	1,277	1,576	1,633	1,013	1,338	1,362	939	1,273	1,376
Kyneton	1,298	1,546	1,631	1,012	1,271	1,381	951	1,273	1,331
Maldon	1,271	1,406	1,429	972	1,110	1,133	950	1,093	1,137
Maryborough	1,299	1,477	1,569	1,022	1,200	1,302	977	1,154	1,270
Mildura	1,343	1,940	2,074	1,155	1,711	1,856	1,102	1,757	1,829
Nhill	1,269	1,532	1,585	1,078	1,341	1,405	1,006	1,348	1,409
Omeo	1,413	1,571	1,637	1,131	1,276	1,336	1,024	1,182	1,228
Orbost	1,311	1,577	1,688	1,042	1,371	1,437	1,020	1,415	1,547
Portland	1,279	1,520	1,598	1,057	1,374	1,480	1,023	1,346	1,467
St. Arnaud	1,289	1,582	1,674	1,046	1,335	1,457	976	1,244	1,325
Sale	1,276	1,540	1,650	972	1,233	1,335	936	1,252	1,360
Shepparton	1,238	1,570	1,672	1,040	1,405	1,517	1,010	1,454	1,569
Stawell	1,379	1,626	1,725	1,067	1,307	1,425	1,070	1,331	1,423
Swan Hill	1,268	1,696	1,762	1,008	1,436	1,567	982	1,574	1,739
Walhalla	1,367	1,433	1,472	1,106	1,172	1,212	1,086	1,165	1,191
Wandiligong	1,335	1,440	1,467	1,097	1,202	1,229	1,051	1,156	1,183
Wangaratta	1,386	1,706	1,778	1,031	1,351	1,445	1,014	1,350	1,431
Warracknabeal	1,249	1,533	1,611	998	1,298	1,367	973	1,335	1,400
Wonthaggi	1,393	1,702	1,788	996	1,360	1,435	1,000	1,439	1,527
Yackandandah	1,344	1,568	1,620	1,058	1,282	1,335	996	1,180	1,207
Weighted Average for State	1,287	1,660	1,778	980	1,376	1,493	971	1,389	1,517

INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 150 TOWNS, ETC.—*continued.*

State and Town.	1920.			1921.			1922.		
	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
QUEENSLAND—									
Brisbane	1,176	1,466	1,557	1,006	1,298	1,385	942	1,275	1,385
Toowoomba	1,123	1,373	1,458	942	1,199	1,285	927	1,183	1,262
Rockhampton	1,185	1,403	1,457	1,000	1,225	1,270	946	1,194	1,239
Charters Towers	1,255	1,495	1,560	1,034	1,300	1,353	993	1,243	1,312
Warwick	1,198	1,408	1,500	986	1,253	1,315	919	1,175	1,230
Bundaberg	1,211	1,422	1,507	953	1,170	1,263	940	1,192	1,278
Cairns	1,385	1,749	1,846	1,127	1,474	1,544	1,044	1,452	1,538
Charleville	1,287	1,660	1,817	1,138	1,565	1,697	1,072	1,466	1,624
Chillagoe	1,313	1,418	1,445	1,230	1,494	1,625	1,050	1,313	1,379
Cloncurry	1,458	1,805	1,950	1,169	1,572	1,660	1,115	1,488	1,585
Cooktown	1,430	1,550	1,583	1,224	1,325	1,360	1,126	1,233	1,270
Cunnamulla	1,272	1,548	1,601	1,102	1,312	1,391	1,047	1,363	1,441
Goondiwindi	1,230	1,464	1,566	997	1,234	1,326	1,016	1,271	1,367
Gympie	1,201	1,405	1,491	1,036	1,247	1,313	998	1,251	1,336
Hamilton	1,184	1,579	1,710	1,008	1,403	1,475	975	1,370	1,442
Hughenden	1,323	1,777	1,879	1,172	1,665	1,797	1,092	1,586	1,750
Ipswich	1,183	1,433	1,519	1,048	1,361	1,458	951	1,241	1,326
Longreach	1,294	1,564	1,639	1,094	1,375	1,452	1,098	1,385	1,487
Mackay	1,327	1,639	1,718	1,106	1,453	1,567	962	1,327	1,436
Maryborough	1,175	1,399	1,466	1,006	1,245	1,364	962	1,231	1,363
Mt. Morgan	1,206	1,470	1,535	1,000	1,211	1,250	965	1,183	1,222
Roma	1,195	1,524	1,590	1,058	1,420	1,535	1,009	1,371	1,450
Townsville	1,310	1,732	1,840	1,138	1,529	1,663	1,079	1,493	1,632
Winton	1,435	1,863	1,961	1,168	1,607	1,738	1,090	1,551	1,715
Weighted Average for State	1,201	1,478	1,564	1,019	1,303	1,386	963	1,272	1,368
SOUTH AUSTRALIA—									
Adelaide	1,291	1,671	1,795	991	1,381	1,527	987	1,418	1,548
Moonta, etc.	1,296	1,561	1,638	996	1,248	1,344	990	1,245	1,351
Port Pirie	1,305	1,648	1,723	1,020	1,346	1,418	978	1,297	1,391
Mt. Gambier	1,264	1,490	1,650	972	1,198	1,259	950	1,185	1,252
Peterborough	1,267	1,564	1,659	1,050	1,343	1,442	1,013	1,303	1,373
Gawler	1,237	1,497	1,574	1,003	1,266	1,329	955	1,294	1,389
Kapunda	1,248	1,406	1,459	985	1,157	1,249	947	1,184	1,260
Murray Bridge	1,276	1,675	1,776	988	1,361	1,457	947	1,348	1,416
Pt. Augusta	1,313	1,642	1,749	1,049	1,376	1,465	1,023	1,348	1,451
Pt. Lincoln	1,252	1,562	1,611	1,048	1,325	1,404	1,061	1,337	1,410
Pt. Victor (Victor Harbour)	1,245	1,551	1,692	991	1,340	1,451	975	1,502	1,633
Renmark	1,356	1,784	1,905	1,104	1,617	1,740	1,059	1,652	1,783
Weighted Average for State	1,289	1,652	1,767	995	1,364	1,498	986	1,392	1,515
WESTERN AUSTRALIA—									
Perth and Fremantle	1,172	1,527	1,623	1,058	1,440	1,530	998	1,389	1,577
Kalgoorlie and Boulder	1,341	1,694	1,772	1,179	1,535	1,611	1,154	1,493	1,557
Midland Junction and Guildford	1,221	1,481	1,563	1,110	1,403	1,512	1,034	1,368	1,449
Bunbury	1,220	1,509	1,556	1,105	1,422	1,485	1,046	1,397	1,497
Geraldton	1,222	1,604	1,690	1,086	1,488	1,576	1,065	1,462	1,548
Albany	1,290	1,603	1,678	1,153	1,461	1,547	1,099	1,395	1,467
Broome	1,488	..	..	1,402	..	..	1,308	1,966	2,098
Carnarvon	1,387	1,821	1,854	1,297	1,659	1,745	1,237	1,730	1,779
Cue	1,423	1,633	1,719	1,341	1,519	1,604	1,312	1,507	1,602
Katanning	1,164	1,549	1,595	1,019	1,397	1,476	1,009	1,388	1,549
Leonora	1,469	1,732	1,798	1,267	1,399	1,465	1,269	1,427	1,467
Menzies	1,649	1,781	1,807	1,343	1,474	1,488	1,314	1,446	1,472
Northam	1,205	1,537	1,659	1,104	1,420	1,558	1,081	1,432	1,542
Ravensthorpe	1,359	1,457	1,523	1,268	1,367	1,432	1,158	1,257	1,323
Weighted Average for State	1,220	1,565	1,654	1,095	1,458	1,546	1,045	1,416	1,506

INDEX-NUMBERS.—COST OF FOOD, GROCERIES, AND HOUSING IN 150 TOWNS, ETC.—*continued.*

State and Town.	1920.			1921.			1922.		
	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.	Food and Groceries only.	Food, Groceries and Rent of 4-Roomed Houses.	Food, Groceries and Rent of 5-Roomed Houses.
	A	B	C	A	B	C	A	B	C
TASMANIA—									
Hobart	1,362	1,827	1,923	1,081	1,520	1,631	1,013	1,416	1,592
Launceston	1,339	1,658	1,793	1,009	1,331	1,475	1,007	1,374	1,536
Zeehan	1,419	1,602	1,669	1,167	1,325	1,358	1,116	1,281	1,327
Beaconsfield	1,238	1,299	1,328	1,049	1,110	1,113	995	1,069	1,091
Queenstown	1,274	1,537	1,616	1,134	1,397	1,476	1,092	1,356	1,435
Burnie	1,290	1,652	1,738	1,017	1,379	1,484	1,028	1,454	1,586
Campbelltown	1,214	1,336	1,378	1,066	1,206	1,277	979	1,129	1,183
Devonport	1,291	1,650	1,715	1,074	1,434	1,518	1,010	1,421	1,490
Franklin	1,328	1,564	1,643	1,088	1,335	1,398	1,024	1,257	1,327
Oatlands	1,250	1,408	1,441	1,075	1,223	1,269	990	1,151	1,178
Scottsdale	1,255	1,483	1,540	998	1,261	1,327	1,051	1,315	1,380
Weighted Average for State	1,338	1,704	1,802	1,063	1,416	1,525	1,020	1,375	1,519
Weighted Average for Australia	1,282	1,662	1,763	1,011	1,405	1,507	998	1,415	1,525

By deducting the index-number in column A from those in columns B and C, the relative aggregate expenditure on housing accommodation can be ascertained. Thus for November, 1922, the index-number for food and groceries in Melbourne (column A) is 967. Subtracting this from 1,431 (column B) gives a difference of 464, which is the relative cost of house rent for houses of 4 rooms, and from 1,570 (column C) gives a difference of 603, which is the relative cost of house rent for houses of 5 rooms. Similarly the relative cost of housing accommodation can be ascertained for each of the towns included.

A table showing the retail price index-numbers (food and groceries) for each of the thirty towns for various months in the year since July, 1914, appeared in previous issues, but consideration of space precludes its repetition in the present issue. This table is, however, given in Labour Report No. 13, issued by this Bureau.

§ 12. Variations in the Cost of Food, Groceries, Rent, Clothing and Miscellaneous Expenditure.

1. **General.**—The index-numbers in the preceding paragraphs show the variations in the cost of food, groceries, and house rent. The expenditure on these items covers approximately 60 per cent. of the total expenditure of the ordinary household. The balance is expended on clothing, boots, fuel, light, and such miscellaneous items as renewals of furniture, furnishings, drapery, crockery, lodge dues, trade union dues, recreation, newspapers, etc. The Royal Commission on the Basic Wage recommended in its Report that a method should be adopted of ascertaining from time to time the rise and fall in the purchasing-power of money in its relation to the total household expenditure. The Government adopted the recommendation, and the duty of carrying out the necessary investigations was entrusted to the Bureau of Census and Statistics, and the methods hereafter described have been adopted for the purpose of measuring variations in the cost of the whole household expenditure.

2. **Methods Adopted.**—The Commission was concerned principally with the ascertainment of variations in the cost of the regimen described in the Indicator Lists published in the Report. It is clear, however, that restriction of the investigations of the Bureau of Census and Statistics in the way suggested by the Commission, would limit their usefulness. It was decided, therefore, to apply to the extended investigation

the method of index-numbers already used in the investigations into variations in the cost of food, groceries, and rent. The index-numbers may be used to determine accurately from time to time the rise and fall in the purchasing-power of money in relation to the reasonable standard of comfort for the typical family as outlined by the Commission, as well as for the determination of variations in any standard fixed by previous investigators, or which may be fixed in the future.

After careful investigation it was decided to adopt for food, groceries, and house rent the commodities, method, and weighting already in use for the investigations which have been and are being made by this Bureau. The commodities and quantities adopted for food and groceries conform very closely to those given in the Indicator Lists of the Commission. With regard to rent, the Commission adopted a certain type of five-roomed house as its standard for determining the amount allowed for house rent. The investigations made by this Bureau were not confined to any particular type, but to the predominant house rent, and can with safety be used to show variations in the rent being paid for the type of house described by the Commission.

The investigations of this Bureau advisedly had been confined to food, groceries, and house rent,* and it was necessary, therefore, to make investigations into the cost of clothing and miscellaneous expenditure. With regard to clothing, the Basic Wage Commission collected a great deal of information as to prices and life of articles, and these have been utilized in computing the index-numbers given in the following tables. Forms were sent out to retailers on which the prices of the articles at November, 1920, were given. These prices, so far as the capital cities are concerned (being in general the prices quoted by the firms to whom the forms were sent), are the predominant prices, *i.e.*, the price of the grade of the articles which is most in demand. The retailers were asked to quote for November, 1921, and for May, 1922, the prices of the same articles. In order to ascertain the change in expenditure, the quantities and life as given in the Indicator Lists of the Basic Wage Commission were used for "weighting" purposes to arrive at a weekly expenditure for clothing. This weekly expenditure is then multiplied by weights in the same manner as is the weekly expenditure on rent, thus giving an aggregate expenditure comparable with the aggregate expenditure on food and groceries and on rent.

With regard to Miscellaneous Expenditure, which covers a very wide field, inquiries were made as to variations in cost of fuel and light, household utensils, drapery, crockery, etc., and also with regard to other items included in the Indicator Lists for Miscellaneous Expenditure, and the aggregate expenditure on these items has been computed in the same manner as that for clothing.

The item Groceries (not Food) has been omitted from Miscellaneous Expenditure, though it was so described by the Commission, as the index-numbers already published by this Bureau cover the items allowed for, such as soap, starch, blue, etc.

3. Period Selected as Base.—For the purpose of making comparisons, it was necessary to fix some period as the base. In the case of index-numbers for food, groceries, and rent, already published, the base period is the year 1911. For the new index-numbers covering all the items of household expenditure, November, 1914, was adopted owing to the difficulty of securing information with regard to prices of clothing and miscellaneous items for earlier years. While the index-numbers for 1914 in the following tables relate to the month of November, they may be accepted as typical of immediately pre-war conditions. As in the case of the base period, 1911, the weighted average cost of the six capital cities has been taken, and the aggregate expenditure in November, 1914, made equal to 1,000.

4. Variations in Cost in the Capital Cities.†—The following table shows, by means of index-numbers, the variations in the cost of the commodities and services included in the investigation. The cost in November, 1914, in the six capital cities considered as a whole has been taken as the basis of the table and made equivalent to 1,000. The index-numbers are comparable and show the variations not only in each city from period

* See pages 22-25 of Labour Report No. 12.

† In Labour Report No. 13, pp. 54 to 59, index-numbers are given showing the relative cost from November, 1921, to November, 1922, in 30 of the principal towns in Australia.

to period, but also as between the various cities at any given period. Thus, the increase in cost in the six capital cities from November, 1914, was greatest in November, 1920, when it amounted to 66.5 per cent. The increase in November, 1922, compared with November, 1914, was 40.2 per cent. Further, in November, 1922, the cost of the commodities and services included was greatest in Hobart (1,452) and least in Brisbane (1,275).

INDEX-NUMBERS, TOTAL HOUSEHOLD EXPENDITURE, CAPITAL CITIES.— 1914 TO 1922.

(NOTE.—Weighted average cost in November, 1914, for all articles in capital cities taken as base = 1,000).

Cities.	November.								
	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Sydney	1,037	1,159	1,187	1,266	1,328	1,505	1,681	1,477	1,440
Melbourne	986	1,117	1,124	1,194	1,294	1,437	1,704	1,475	1,417
Brisbane	898	1,046	1,016	1,114	1,222	1,408	1,511	1,330	1,275
Adelaide	997	1,114	1,140	1,186	1,265	1,447	1,657	1,411	1,370
Perth	1,001	1,059	1,123	1,166	1,238	1,404	1,552	1,409	1,301
Hobart	997	1,110	1,121	1,253	1,311	1,489	1,724	1,536	1,452
Weighted Average ..	1,000	1,123	1,140	1,213	1,295	1,461	1,665	1,454	1,402

§ 13. Wholesale Prices.

1. **General.**—The results of an investigation into wholesale prices in Melbourne from 1871 to the end of September, 1912, were given in some detail in Report No. 1 of the Labour and Industrial Branch. Summarized results for later years are included in later Reports of the same Branch.

The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.* The methods followed for the computation of the wholesale price index-numbers are the same as those adopted in regard to retail prices. The commodities included, the units of measurement for which the prices are taken, and the mass-units, indicating the relative extent to which each commodity is used or consumed, are shown in a tabular statement in Labour Report No. 11 (page 68).

2. **Index-Numbers.**—(i) *Index-Numbers.* Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shown in the following table, and in each case were computed with the prices in the year 1911 as base. They show, for each of the years specified, the expenditure necessary, if distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities concerned, to purchase what would have cost £1,000 in 1911. Thus, from the last column it will be seen that the cost of the relative quantities of the various commodities was 1,229 in 1871, and 974 in 1901, as compared with 1,000 in 1911, 1,934 in 1918, 2,055 in 1919, and 2,480 in 1920. In other words, prices were lower in 1911 than in either 1871, 1914, 1918, or 1920, and the purchasing-power of money in 1911 was, accordingly, greater. Again, prices were lower in 1901 than in 1911, and the purchasing-power of money in the former year was, therefore, greater.

* In the computation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base (= 1,000), while for later years the aggregate expenditure on 92 commodities is taken.

INDEX-NUMBERS.—WHOLESALE PRICES, MELBOURNE, 1861 TO 1922.

Year.	I. Metals. and Coal.	II. Jute, Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chemi- cals.	All Com- modities together.
1861 ..	1,438	1,881	1,583	1,008	1,963	..	1,070	2,030	1,538
1871 ..	1,096	1,257	1,236	864	1,586	..	1,044	1,409	1,229
1881 ..	1,178	1,115	1,012	935	1,421	..	1,091	1,587	1,121
1891 ..	895	847	1,024	995	1,032	888	780	1,194	945
1901 ..	1,061	774	928	1,029	1,048	1,345	841	917	974
1902 ..	1,007	756	1,193	1,215	945	1,447	837	881	1,051
1903 ..	923	834	1,209	1,059	936	1,443	875	921	1,049
1904 ..	821	885	754	876	916	1,427	845	875	890
1905 ..	772	850	894	980	942	1,209	801	859	910
1906 ..	882	978	916	972	923	1,110	896	864	948
1907 ..	1,037	1,017	973	1,020	948	1,294	968	961	1,021
1908 ..	1,033	901	1,312	1,198	968	1,335	935	891	1,115
1909 ..	1,014	907	1,000	1,119	978	1,088	911	815	993
1910 ..	1,004	1,052	969	1,100	999	1,008	996	898	1,003
1911 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912 ..	1,021	991	1,370	1,206	1,052	1,357	1,057	978	1,170
1913 ..	1,046	1,070	1,097	1,054	1,024	1,252	1,128	995	1,088
1914 ..	1,099	1,032	1,207	1,137	1,021	1,507	1,081	1,253	1,149
1915 ..	1,284	1,017	2,162	1,530	1,133	2,435	1,275	1,528	1,604
1916 ..	1,695	1,423	1,208	1,485	1,322	2,515	1,491	1,760	1,504
1917 ..	2,129	2,008	1,157	1,423	1,343	2,403	1,884	2,171	1,662
1918 ..	2,416	2,360	1,444	1,454	1,422	2,385	2,686	3,225	1,934
1919 ..	2,125	2,363	1,985	1,651	1,516	2,348	2,851	2,898	2,055
1920 ..	2,298	2,624	2,439	2,209	1,918	3,279	3,226	2,825	2,480
1921 ..	2,173	1,362	1,767	2,000	1,976	2,158	2,733	2,303	1,903
1922 ..	1,942	1,681	1,628	1,648	1,869	1,787	2,005	1,965	1,758

NOTE.—The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.

3. Fluctuations, July, 1914, to June, 1923.—Since the outbreak of war, prices of many commodities have increased considerably. This is shown in the following table in which the index-numbers are given for each group for the months of July, 1921 and 1922, and June, 1923, taking July, 1914, the last month before the outbreak of war, as base (=1,000) for each group :—

INDEX-NUMBERS.—WHOLESALE PRICES, MELBOURNE, JULY, 1914, 1921, 1922, AND JUNE, 1923.

Particulars.	I. Metals. and Coal.	II. Jute. Leather, etc.	III. Agri- cultural Produce, etc.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Mate- rials.	VIII. Chemi- cals.	All Groups.
July, 1914 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
July, 1921 ..	1,945	1,107	1,579	1,655	1,881	1,191	2,377	2,198	1,589
July, 1922 ..	1,764	1,555	1,532	1,564	1,810	1,185	1,681	1,991	1,569
June, 1923 ..	1,652	1,946	1,679	1,730	1,705	2,001	1,849	1,856	1,783

§ 14. Control of Trade, Prices, and House Rents.

In previous issues of the Year Book information was given as to the legislative measures enacted by Federal and State Parliaments for the control of trade, prices, and house rents.

In Queensland the Profiteering Prevention Act 1920, and the Fair Rents Act 1920, and in New South Wales the Fair Rents Act 1915, amended in 1920, are still in force. Similar legislative measures enacted by the other States and by the Federal Parliament have been repealed or allowed to expire by effluxion of time.

CHAPTER XIV.

DEFENCE.

§ 1. Military Defence.

1. **State Systems.**—A detailed historical account of the Australian defence forces prior to federation will be found in Official Year Book No. 2, pp. 1075–1080. See also Official Year Book No. 12, p. 999.

The strength of the military forces of the several States prior to federation was generally nearly up to establishment. On the 31st December, 1900 (the eve of Federation), it was :—New South Wales, 9,338 ; Victoria, 6,335 ; Queensland, 4,028 ; South Australia, 2,932 ; Western Australia, 2,696 ; Tasmania, 2,024 ; total for Australia, 27,353. This total is exclusive of cadets, reservists, and rifle club members.

2. **Commonwealth System.**—(i) *General.* Under the terms of the Constitution Act 1900, the Commonwealth took over control of defence matters in March, 1901. The growth of the Commonwealth Military Forces may be considered to have taken place in three phases, viz. :—

(a) The first phase, *i.e.*, the welding together of the military forces of the States into one homogeneous army, was entrusted by the Government in 1902 to Major-General Sir Edward Hutton, K.C.B., K.C.M.G., and a sound foundation was laid, upon which the subsequent organization and training was based.

(b) The second phase was the introduction of Universal Training in 1911. During the year 1909 a measure providing for universal training was passed by the Commonwealth Parliament, and the scheme came into force in 1911 after the advice and recommendations of the late Lord Kitchener had been obtained. By the Defence Acts of 1903 and 1904 all male inhabitants between the ages of 18 and 60 years were made liable to serve in Australia with the defence forces in *time of war*. The more recent Acts make training and service compulsory up to the age of 26 years *in time of peace*. By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. More detailed reference to these matters will be found in Official Year Book No. 12, p. 999 *et seq.*

(c) The third phase, Divisional Organization, came into operation from the 1st May, 1921. Under this system a war organization, evolved from the Australian Imperial Force, is applied to peace conditions, with a minimum of permanent staff and forces. Numbers of units and formations have been altered to correspond with those of the A.I.F. and every effort is being made to maintain the traditions established by those units in the Great War.

(ii) *Military Population.* In connexion with the numbers available, the figures of male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the Census of 1921 (4th April) was about 300,000 ; at citizen soldier age, *i.e.*, between 18 and 26, 353,000 ; these latter, with 409,000 at ages between 26 and 35, give 762,000 as the total males at the best period for military service. It is estimated that 529,000 of those available between the ages of 18 and 35 were not married or widowers without children, and 233,000 were married or widowers with children. In addition, there were about 762,000 between 35 and 60.

(iii) *Allotment of Units.* The organization is territorial, and the divisions based upon infantry units. There are 62 battalion areas, forming 15 brigades. The areas have approximately equal numbers of males of citizen soldier age, and each furnishes a battalion of infantry, and a proportion of other troops.

ALLOTMENT OF UNITS TO AREAS, 1st FEBRUARY, 1923.

Battalion Areas.														
State.	Brigade Areas.	Number of Areas.	Providing the undermentioned Units—											Training Areas.
			Infantry Battalions.	Light Horse Regiments.	Field Artillery Batteries.	Engineers.		Signallers.		A.A.S.C. Companies.	A.A.M.C.			
						Companies.	Troops.	Sections.	Troops.		Field Amb.	San. Section.	A.A.V.C. Sections.	
N.S. Wales ..	5	21	21	7	17	7	3	18	4	10	8	3	4	35
Victoria ..	5	21	21	7	17	7	3	18	4	10	7	2	4	27
Queensland ..	2	8	8	4	7	2	1	9	1	3	3	1	1	10
S. Aust. ..	1	5	5	4	4	1	1	2	1	2	2	1	1	9
W. Aust. ..	1	4	4	1	3	1	..	4	..	1	1	1	..	7
Tasmania ..	1	3	3	1	3	1	..	3	..	1	1	1	..	4
Total ..	15	62	62	24	51	19	8	54	10	27	22	9	10	92

(iv) *Strength of Military Forces.* (a) *Districts.* There was little alteration in the numbers serving in the Australian military forces from the institution of the Commonwealth to the year of the introduction of the compulsory training system. From 1913 to 1918, however, the annual increase was considerable. As a result of the International Conference which met at Washington on the 11th November, 1921, it was decided by the Australian Government in 1922 that the universal training law is to be continued, but its operation is to be restricted to the more populous centres and to certain quotas only, viz. :—Citizen Force training will be confined to youths of 18 and 19 (representing two quotas annually instead of seven as previously). Senior Cadet training will be confined to boys of 16 and 17 (representing two quotas annually instead of four as previously). Junior Cadet training ceased as an activity of the Defence Department on the 30th June, 1922. The existing Divisional Organization of the Field Force is being retained in skeleton form, units being maintained at considerably below war strength. Consequent upon the reductions in staffs and establishments, considerable numbers of the military and civil *personnel* were retired.

TRAINING STRENGTH OF MILITARY FORCES, 1901, 1913, AND 1918 TO 1922.

(a) District.	1901. (b) 1/3/01	1913. 30/6/13.	1918. 30/6/18.	1919. 30/6/19.	1920. 30/6/20.	1921. 31/12/21.	1922. 31/12/22.
Hd.-Qrs. ..	..	(c) 277	(c) 473	(c) 362	(c) 463	(c) 458	(c) 499
1st Q'd. ..	4,310	4,625	15,899	13,938	13,323	14,752	4,319
2nd N.S.W. ..	9,772	12,105	41,751	37,851	38,558	46,924	14,561
3rd Vict. ..	7,011	10,840	39,492	34,770	30,762	41,484	11,117
4th S. Aus. ..	2,956	3,228	12,629	12,867	10,590	12,495	3,452
5th W. Aus. ..	2,283	1,685	6,333	5,508	4,400	6,540	2,018
6th Tas. ..	2,554	1,777	5,609	4,585	4,569	5,307	1,190
Total ..	28,886	34,537	122,186	109,881	102,665	127,960	37,156

(a) Approximately coterminous with boundaries of States. (b) Date of Commonwealth taking over the military forces from States. (c) Including cadets at Royal Military College of Australia, Duntroon.

(b) *Various Arms.* The numbers of the different arms of the service on the 31st December, 1922, were as follows :—

ARMS OF THE COMMONWEALTH DEFENCE, 31st DECEMBER, 1922.

Light Horse ..	3,733	Australian Instructional Corps ..	602
Field Artillery ..	3,934	Ordnance (including Armament	
Garrison Artillery ..	562	Artificers) ..	285a
Field Engineers ..	1,452	Pay Department, Rifle Range	
Signallers ..	1,173	Staff, Rifle Club Staff, and	
Infantry ..	23,411	Clerical Staff ..	296a
Army Service Corps ..	533	Royal Military College (Cadets)	26
Army Veterinary Corps ..	95	Provost Staff ..	15
Army Medical Corps ..	807		
Staff Corps ..	232	Grand Total ..	37,156

(a) Includes civilians.

(c) *Classification of Land Forces.* The following table shows the strength of the land forces in each State, classified according to nature of service, on the 31st December, 1922 :—

CLASSIFICATION OF LAND FORCES,(a) 31st DECEMBER, 1922.

Branch of Service.	Army Head-quarters.	1st Military District. (Qld.)	2nd Military District. (N.S.W.)	3rd Military District. (Vic.)	4th Military District. (S. Aus.)	5th Military District. (W. Aus.)	6th Military District. (Tas.)	Total.
Permanently employed ..	(a)499	203	556	480	90	157	88	2,073
Citizen Soldiers ..	..	4,230	14,261	10,833	3,362	1,861	1,102	35,649
Unattached List of Officers ..	..	47	153	139	61	29	18	447
Engineer and Railway Staff Corps ..	..	9	12	10	5	7	5	48
Area Medical Officers ..	..	10	35	27	9	2	4	87
Reserve of Officers ..	..	1,391	4,204	3,524	1,122	951	370	11,562
Chaplains ..	..	62	143	86	27	33	22	373
Total ..	499	5,952	19,364	15,099	4,676	3,040	1,609	50,239

(a) Includes Cadets at Royal Military College of Australia, Duntroon.

(d) *Numbers Serving under Compulsory Provisions.* The following tables show those registered and training under the compulsory system, distinguishing Citizen Forces and Senior Cadets. Junior Cadet training ceased as an activity of the Department of Defence on 30th June, 1922.

UNIVERSAL TRAINING.—CITIZEN FORCES REGISTRATIONS, 1903 AND 1904 QUOTAS, AS AT 31st DECEMBER, 1922.

Military Formations and Districts.	1904 Quota.	1903 Quota.	Total Registrations.
1st Division (2nd M.D.) ..	4,319	4,129	8,448
2nd Division (2nd M.D.) ..	7,733	6,839	14,572
3rd Division (3rd M.D.) ..	5,394	4,870	10,264
4th Division (3rd M.D.) ..	3,946	3,489	7,435
4th Division (4th M.D.) ..	3,261	2,874	6,135
11th Mixed Brigade (1st M.D.) ..	4,154	3,673	7,827
12th Mixed Brigade (6th M.D.) ..	1,300	1,204	2,504
13th Mixed Brigade (5th M.D.) ..	2,095	1,989	4,084
Total ..	32,202	29,067	61,269

REGISTRATIONS, 1895 TO 1902 QUOTAS, AS AT 31st DECEMBER, 1920.(a)

Military District.	Total Registrations in Training Areas.								Total.
	Quota, 1895.	Quota, 1896.	Quota, 1897.	Quota, 1898.	Quota, 1899.	Quota, 1900.	Quota, 1901.	Quota, 1902.	
1st ..	4,629	4,391	4,572	4,584	4,915	4,865	4,453	4,260	36,669
2nd ..	9,844	9,947	9,871	9,346	9,607	10,058	9,970	10,451	79,094
3rd ..	5,989	6,147	6,036	6,044	6,747	7,325	7,390	7,248	52,926
4th ..	3,304	3,219	2,958	2,914	3,014	3,226	2,878	2,805	24,318
5th ..	932	1,030	1,107	1,146	1,222	1,178	1,244	1,347	9,206
6th ..	1,237	1,324	1,293	1,144	1,248	1,381	1,222	1,181	10,030
Total ..	25,935	26,058	25,837	25,178	26,753	28,033	27,157	27,292	212,243

(a) Latest particulars available, as no training is required of these quotas.

CITIZEN FORCES, EXEMPTIONS AND MISSING TRAINEES, 31st DECEMBER, 1922.

Military Formations and Districts.	Exemptions.			Missing Trainees.
	1904 Quota.	1903 Quota.	Total.	1904 and 1903 Quotas.
1st Division (2nd M.D.) ..	1,753	1,217	2,970	206
2nd Division (2nd M.D.) ..	2,895	2,120	5,015	637
3rd Division (3rd M.D.) ..	2,003	1,601	3,604	576
4th Division (3rd M.D.) ..	1,642	1,521	3,163	643
4th Division (4th M.D.) ..	1,303	988	2,291	78
11th Mixed Brigade (1st M.D.)	2,280	1,748	4,028	54
12th Mixed Brigade (6th M.D.)	698	658	1,356	81
13th Mixed Brigade (5th M.D.)	1,141	1,005	2,146	44
Total	13,715	10,858	24,573	2,319

TRAINEES OF CITIZEN FORCE AGE SERVING WITH SENIOR CADETS, 31st DECEMBER, 1922.

Military Formations and Districts.	Trainees of Citizen Forces serving with Senior Cadets as Officers.			Number serving under Reg. 375.
	1904 Quota.	1903 Quota.	Total.	
1st Division (2nd M.D.) ..	31	10	41	..
2nd Division (2nd M.D.) ..	38	32	70	3
3rd Division (3rd M.D.) ..	29	30	59	21
4th Division (3rd M.D.) ..	27	8	35	28
4th Division (4th M.D.) ..	14	13	27	30
11th Mixed Brigade (1st M.D.)	15	10	25	16
12th Mixed Brigade (6th M.D.)	1	3	4	1
13th Mixed Brigade (5th M.D.)	6	3	9	12
Total	161	109	270	111

SENIOR CADETS.—REGISTRATIONS AND NUMBER ACTUALLY IN TRAINING, 31st DECEMBER, 1922 (1905 TO 1908 QUOTAS).

Military Formations and Districts.	Total Registrations.—Senior Cadets.					Number actually in Training.—Senior Cadets.		
	1908 Quota.	1907 Quota.	1906 Quota.	1905 Quota.	Total.	1906 Quota.	1905 Quota.	Total.
1st Division (2nd M.D.) ..	3,355	4,440	4,757	4,552	17,104	3,129	2,781	5,910
2nd Division (2nd M.D.) ..	6,346	7,300	7,237	7,243	28,126	4,836	4,477	9,313
3rd Division (3rd M.D.) ..	4,773	5,192	5,329	5,559	20,853	3,704	3,582	7,286
4th Division (3rd M.D.) ..	2,713	3,370	3,611	3,716	13,410	1,974	2,032	4,006
4th Division (4th M.D.) ..	2,647	2,726	3,019	2,912	11,304	1,966	1,762	3,728
11th Mixed Brigade (1st M.D.)	3,522	3,997	4,062	4,285	15,866	2,098	1,992	4,090
12th Mixed Brigade (6th M.D.)	943	1,082	1,249	1,422	4,696	479	584	1,063
13th Mixed Brigade (5th M.D.) .. ..	..	1,985	2,090	2,192	6,267	1,122	1,071	2,193
Total	24,299	30,092	31,354	31,881	117,626	19,308	18,281	37,589

**SENIOR CADETS, MEDICAL EXAMINATIONS, 1908 QUOTA, YEAR ENDED
31st DECEMBER, 1922.**

Military Formations and Districts.	Number of Examinations carried out.	Fit.		Unfit (A.M.R. 369).		Unfit (including those under A.M.R. 375, but excluding those under A.M.R. 369).	
		Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
1st Division (2nd M.D.)	2,241	2,143	95.62	23	1.03	75	3.35
2nd Division (2nd M.D.)	4,307	4,046	93.94	70	1.62	191	4.44
3rd Division (3rd M.D.)	2,852	2,681	94.00	33	1.16	138	4.84
4th Division (3rd M.D.)	1,777	1,668	73.87	15	0.84	94	5.29
4th Division (4th M.D.)	1,689	1,564	92.60	14	0.83	111	6.57
11th Mixed Brigade (1st M.D.) ..	2,143	1,984	92.58	15	0.70	144	6.72
12th Mixed Brigade (6th M.D.) ..	955	885	92.67	6	0.63	64	6.70
13th Mixed Brigade (5th M.D.) ..	1,209	1,148	94.95	10	0.83	51	4.22
Total ..	17,173	16,119	93.86	186	1.08	868	5.06

**CITIZEN FORCES, MEDICAL EXAMINATIONS, 1904 QUOTA, YEAR ENDED
31st DECEMBER, 1922.**

Military Formations and Districts.	Number of Examinations carried out.	Fit.		Unfit (A.M.R. 369).		Unfit (including those under A.M.R. 375, but excluding those under A.M.R. 369).	
		Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
1st Division (2nd M.D.)	2,757	2,516	91.26	56	2.03	185	6.71
2nd Division (2nd M.D.)	5,127	4,365	85.14	162	3.16	600	11.70
3rd Division (3rd M.D.)	4,003	3,417	85.36	135	3.37	451	11.27
4th Division (3rd M.D.)	1,942	1,691	87.08	102	5.25	149	7.67
4th Division (4th M.D.)	1,954	1,704	87.21	55	2.81	195	9.98
11th Mixed Brigade (1st M.D.) ..	2,352	1,976	84.01	92	3.91	284	12.08
12th Mixed Brigade (6th M.D.) ..	911	749	82.22	22	2.41	140	15.37
13th Mixed Brigade (5th M.D.) ..	1,032	898	87.01	36	3.50	98	9.49
Total ..	20,078	17,316	86.24	660	3.29	2,102	10.47

(v) *Administration and Instruction.* The staff provided for the administration and training of the various arms consists of 232 officers (Staff Corps), 44 quartermasters, and 558 warrant and non-commissioned officers (Australian Instructional Staff).

(vi) *The Royal Military College, Duntroon, Federal Capital Territory,* was established for the purpose of providing trained officers for the permanent forces. Admission is by open competitive examination, a definite number of vacancies being allotted to each State of the Commonwealth on a population basis. Further particulars respecting the College are given on page 915 of Official Year Book No. 15. In October, 1922, the staff numbered—military, 15; civil, 9.

(vii) *Railways and Defence.* A War Railway Council, consisting of military and railway officers, was instituted in 1911. Its chief duties are to furnish advice and

information regarding railway transport for military purposes, and to secure co-operation between the Commonwealth Defence Department and the States' Railway Departments in regard to concentration and mobilization of troops. To prevent delay in the transport of troops, particularly that caused by the transshipment of baggage and implements of war, the Council has recommended the adoption of a uniform railway gauge on lines linking up the States' capitals. An Engineer and Railway Staff Corps has been instituted, and numbered 48 officers on 31st December, 1922. Fuller details will be found in Official Year Book No. 6, pp. 1070-1.

(viii) *Rifle Clubs*. On the 31st December, 1922, there were 1,191 clubs with a membership of 41,753, and in addition 111 miniature rifle clubs having a membership of 3,960. Applications to form rifle clubs are made to the commandant of a district, and must be signed by not less than thirty male persons between the ages of sixteen and sixty, who are required to be natural-born or naturalized British subjects, and are not undergoing training under the universal clauses of the Defence Act. Persons, however, who are temporarily exempted from universal training may be permitted to join rifle clubs during the period of their temporary exemption. Members of rifle clubs must fire an annual course of musketry, but do not undergo any systematic drill.

On the 3rd August, 1921, the administration of rifle clubs was transferred from military to civil control, and rifle clubs ceased to form part of the military organization.

§ 2. Naval Defence.

1. *State Systems*.—Information regarding naval defence systems prior to 1901 will be found in Official Year Book No. 12, p. 1011, but considerations of space preclude its insertion in the present volume.

2. *Commonwealth System from 1901*.—Australian defence, in both its branches (naval and military), passed to the Commonwealth in 1901. Prior to 1905 a naval officer commanding administered the naval forces under the Minister. When the Council of Defence was established in that year, the Naval Board was constituted, and took over the administration of the Commonwealth naval forces, thereby ensuring continuity of policy and administration. His Majesty the King approved of a flag, similar to that used by the Board of Admiralty, being flown when the Naval Board is present in an official capacity. This flag has now taken its place amongst the naval flags of the various nations.

3. *The Present System*.—(i) *General*. An outline of the development of Australian naval policy was given in Official Year Book No. 3, pp. 1060-61, and No. 12, p. 1012. Some account of the building of the Australian Fleet, the proposed and modified cost thereof, the compact with the Imperial Government, etc., appears in Official Year Book No. 15, pp. 921 *et seq.* Up to the 30th June, 1922, the expenditure on construction amounted to £6,846,000.

The Washington Conference of 1921 has had a marked effect on Naval Defence schemes, and all warship building and naval base construction has been suspended. The Fleet *personnel* was reduced from 4,843 in 1921 to 4,000 in 1922, and the ships in commission were reduced from 25 to 13. H.M.A.S. *Australia* has been placed entirely out of commission, and will be disposed of in accordance with the provisions of the Washington Treaty.

(ii) *Naval College*. A naval college has been established at Captain's Point, Jervis Bay, New South Wales. The course is similar to that carried out in naval colleges in England. In December, 1922, there were 46 cadet midshipmen under training. A boy whose thirteenth birthday falls in the year in which the entrance examination is held is eligible to compete provided he is the son of natural-born or naturalized British subjects. From amongst those qualified the Selection Committee chooses the number required. The Commonwealth Government bears the whole expense of uniforms, victualling, travelling, as well as that of the educational course. Altogether 117 officers who have passed through the College are now serving with the Fleet. Others have been transferred to the Emergency List under the "Retirement" scheme of 1922.

(iii) *Training Ships*. H.M.A.S. *Tingira*, moored in Rose Bay, Sydney, was commissioned in April, 1912, to train boys for the *personnel* of the Royal Australian Navy.

The age of entry is fourteen and a half to sixteen years. Only boys of very good character and physique are accepted, after a strict medical examination. The boys must engage to serve until they reach the age of 25. The training lasts about one year, and they are then drafted to a sea-going warship of the Australian Fleet. Recruiting has been satisfactory, there being 150 boys under training on 15th May, 1923.

(iv) *The Naval Station.* The following are the limits of the Naval Station which, since 1st June, 1919, has been controlled by the Commonwealth Government, acting through the Naval Board:—North: From a point in 95 degrees East longitude and 13 degrees South latitude along that parallel to the Eastward to the meridian of 120 degrees East longitude; thence along that meridian to the Northward to 11 degrees South latitude; thence in an easterly direction to the Southern termination of the Eastern boundary of Dutch New Guinea in about 141 degrees East longitude; thence along the meridian of the boundary to the Northward to the Equator; thence along the Equator to the Eastward to 170 degrees East longitude. East: From a point on the Equator on the meridian of 170 degrees East longitude along that meridian to the Southward to 32 degrees South latitude; thence along that parallel to the Westward to the meridian of 160 degrees East longitude; thence along that meridian to the South Pole. South: The South Pole. West: From the South Pole by the meridian of 80 degrees East longitude to the Northward of 30 degrees South latitude; thence along that parallel to the Eastward to the meridian of 95 degrees East longitude; thence along that meridian to the Northward to 13 degrees South latitude.

(v) *Vessels.* The following table shows the vessels of the Royal Australian Navy:—

SHIPS OF THE ROYAL AUSTRALIAN NAVY, JUNE, 1923.

Vessel.	Description.	Displacement.	Power.
		Tons.	H.P.
<i>Adelaide</i>	Light Cruiser	5,500	25,000
<i>Anzac</i>	Flotilla Leader	1,660	36,000
<i>Australia</i>	Battle Cruiser	18,800	44,000
<i>Brisbane</i>	Light Cruiser	5,400	25,000
<i>Cerberus</i>	Gunboat	920	1,600
<i>Countess of Hopetoun</i>	First Class Torpedo Boat	93	1,100
<i>Penguin</i>	Depot Ship	5,880	12,500
<i>Franklin</i>	Yacht	370	350
<i>Geranium</i>	Sloop	1,250	2,000
<i>Huon</i>	T.B. Destroyer	700	11,300
<i>Mallow</i>	Sloop	1,200	1,800
<i>Marguerite</i>	"	1,250	2,200
<i>Melbourne</i>	Light Cruiser	5,400	25,000
<i>Parramatta</i>	T.B. Destroyer	700	9,000
<i>Platypus</i>	Fleet Repair Ship and Destroyer Depot Ship	3,460	2,611
<i>Platypus II.</i>	Turret Ship	3,480	1,660
<i>Stalwart</i>	T.B. Destroyer	1,075	27,000
<i>Success</i>	"	1,075	27,000
<i>Swan</i>	"	700	10,000
<i>Swordsman</i>	"	1,075	27,000
<i>Sydney</i>	Light Cruiser	5,400	25,000
<i>Tasmania</i>	T.B. Destroyer	1,075	27,000
<i>Tattoo</i>	"	1,075	27,000
<i>Tingira</i>	Boys' Training Ship	1,800	..
<i>Torrens</i>	T.B. Destroyer	700	10,000
<i>Warrego</i>	"	700	9,000
<i>Yarra</i>	"	700	9,000
FLEET AUXILIARIES—			
<i>Biloela</i>	Fleet Collier	5,700	2,300
<i>Kurumba</i>	Fleet Oiler	3,970	..

Practically the whole of this Fleet was assembled in Port Phillip on 28th May, 1920. and was reviewed there by H.R.H. the Prince of Wales.

(vi) *Naval Forces.* Besides the sea-going forces, there is a R.A.N. Reserve, which is composed of Citizen Naval Trainees. The *personnel* of the sea-going forces, which was originally largely composed of Imperial officers and men, is now mainly Australian in character and will become more so as time goes on. The strength of the naval forces is given hereunder.

**STRENGTH OF NAVAL FORCES (PERMANENT AND RESERVES),
15th MAY, 1923.**

Description of Force.	Numbers Borne.		
	In Training.	Officers.	Men.
Royal Australian Navy (Sea-going) .. .. .	..	370	3,410
Cadet Midshipmen undergoing training at R.A.N. College ..	46	..	..
Boys undergoing training on H.M.A.S. <i>Tingira</i>	150	..	..
Royal Australian Naval Reserve (Sea-going) .. ..	..	49	..
Royal Australian Naval Reserve .. .. .	..	71	3,896

§ 3. Air Defence.

1. **General.**—Having regard to the development which was taking place in aircraft, the Australian military authorities, as early as 1911, were considering the question of providing for local air defence. In 1912 approval was given for the establishment, as part of the army organization, of a Central Flying School for the training of aeroplane pilots. An area of land was acquired at Point Cook, Victoria; hangars and workshops were erected, and two flying instructors, four mechanics, and five aeroplanes were obtained from England. In June, 1914, the work at Point Cook was sufficiently advanced to permit of training being commenced, and the first course was arranged to begin on the 14th August, 1914. The training of pilots at the School continued actively throughout the War, but after the cessation of hostilities the staff was reduced to a small nucleus.

No steps were taken towards the establishment of a Naval Air Service beyond the appointment, in 1918, of an Air Adviser to the Navy Department.

In 1920 it was resolved to establish an Australian Air Force. Pending the passing of an Air Defence Bill, the Australian Air Force was constituted by proclamation issued under the powers contained in the Defence Act 1903–1918, as part of the Australian Military Forces. This was effected as from 31st March, 1921, and from 13th August, 1921, the Force was designated the Royal Australian Air Force. The Air Defence Bill was passed by the Senate in May of that year, but lapsed on the prorogation of Parliament.

Under the new Air Board Regulations issued in October, 1922, the Air Force is administered by a Board consisting of two Air Force members and a Finance member. To this Force is entrusted the air defence of the Commonwealth, the training of *personnel* for co-operation with the naval and military forces, and the refresher training of pilots engaging in civil aviation. The present establishment of the Force includes the following units:—

- (a) Head-Quarters, Royal Australian Air Force, with representation at the Air Ministry in London; and
- (b) One Station at which are located an Aircraft Depot with store and repair facilities, a Flying Training School, and one squadron of Citizen Force *personnel* with a nucleus of permanent *personnel*.

In deciding all matters of policy the Minister is assisted by a representative Air Council, which includes officers of the Navy, Army, and Air Force, and the Controller of Civil Aviation.

2. **Establishment.**—The approved establishment of the Permanent Air Force comprises 53 officers and 300 airmen, whilst the strength as at the 30th June, 1923, was 49 officers and 296 airmen.

It is proposed to develop the Air Force on the same lines as the Army by forming a nucleus which can be extended when required.

§ 4. Expenditure on Defence.

1. *Distribution.*—(i) *General.* The following table gives the expenditure on Defence from 1917–18 to 1921–22, and the estimate for 1922–23 :—

EXPENDITURE ON DEFENCE, 1917–18 TO 1922–23.

Particulars.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.	1922–23 (Estimate).
	£	£	£	£	£	£
Naval Forces	1,466,164	1,546,586	1,611,325	2,429,852	2,275,590	2,088,900
Military Forces	1,088,351	1,196,028	946,409	1,340,719	1,460,078	1,356,229
Air Services	14,660	4,151	26,813	(d)62,888	(d)146,820	(d)251,042
Naval Works	44,377	8,120	7,663	24,809	80,075	155,952
Construction of Fleet ..	(a)	(b)	(b)	301,284	336,369	50,000
Military—Additions, New Works, Military Storcs, etc. ..	133,578	88,897	89,008	693,255	960,711	195,200
Air Services—Works			19,991	(d)77,040	130,604	115,465
Rent, Repairs and Maintenance Sites for Defence purposes ..	73,678	79,221	78,461	108,728	(e)110,571	(e)111,525
Proportion of Public Works Staff, Salaries and Contingencies ..	17,715	31,880	28,962	26,723	28,318	28,600
Supervision of Public Works by State Officers	1,188	1,630	1,801	2,094	1,994	2,000
Interest on Transferred Properties Audit	129,548	136,699	130,470	122,325	93,586	97,940
Pensions and Retiring Allow- ances	22,565	10,118	16,104	17,298	15,032	14,525
Defence Officers' Compensation (including Navy)	1,277	1,391	1,202	2,162	2,633	2,597
Miscellaneous	11,455	35,530	50,572	53,753	300,000	117,887
					22,349	
Total	3,004,556	3,140,251	3,008,781	5,262,930	5,964,730	4,587,862
Buildings, Works and Sites provided from Loan Fund (excluding construction of Fleet)	(c)717,088	414,430	566,853	401,286	345,987	266,279
War Expenditure and War Gratuity	66,958,360	83,447,990	70,822,326	65,469,800	41,105,913	42,306,334
Total Expenditure on Defence	70,680,004	87,002,671	74,397,960	71,134,016	47,416,630	47,160,475

(a) Provided from Loan Funds for Works. The expenditure in respect of Construction of the Fleet in 1917–18, 1918–19, and 1919–20, was £355,397, £533,694, and £366,696 respectively.
(b) Provided from War Loan Fund. See previous note. (c) Includes Construction of Fleet, £355,397.
(d) Includes Civil Aviation. (e) Includes Rent of Aerodromes, etc.

(ii) *Special War Expenditure, 1914–15 to 1922–23.* The special expenditure for war purposes during each of the years 1914 to 1922 was as set out hereunder :—

SPECIAL WAR EXPENDITURE, 1914–15 TO 1922–23.

Particulars.	1914–15.	1915–16.	1916–17.	1917–18.	1918–19.
	£	£	£	£	£
Special expenditure on Expeditionary and Australian Forces—					
Naval	3,527,904	5,093,530	2,737,890	..	5,443,599
Military	9,474,537	31,938,864	46,408,490	50,957,776	48,148,442
Interest due to Government of United Kingdom for maintenance of Australian troops at the Front	..	..	..	..	3,430,000
Interest on loans from Government of United Kingdom for War purposes ..	36,489	843,893	2,082,258	2,477,288	2,377,690
Sinking Fund on loans from Government of United Kingdom .. ..	..	..	477,743	245,410	245,410
Interest on Australia's War Indebtedness to Government of United Kingdom ..	..	..	..	..	..
Payment in reduction of principal of Australia's War indebtedness to the Government of the United Kingdom .. ..	..	..	..	..	..
Interest on Commonwealth War Loans ..	78,656	1,014,821	2,738,673	4,574,817	7,709,771
Interest on War Gratuity Bonds and Treasury Bills for War Gratuity purposes .. ..	..	200,777	689,384	515,781	955,303
Sinking Funds on loans for War purposes ..	..	..	..	..	..
Amount transferred to Trust Fund, Australian Soldiers' Repatriation Account .. ..	..	250,000	..	200,000	1,300,000
War Pensions (including Administrative expenses)	..	129,273	1,149,242	2,772,077	4,827,368
Advances to States and Territories for purpose of settling returned soldiers on the land ..	..	..	20,000	20,000	1,047,963
Expenditure under War Service Homes Act 1918 ..	..	..	..	..	5,000
Trading Vessels	153,973	318,285	686,700	999,197	272,608
War Gratuity .. ..	..	..	..	..	..
Miscellaneous	1,839,776	1,412,003	4,551,186	4,196,014	7,684,836
Total	15,111,335	41,201,446	61,541,566	66,958,360	83,447,990

SPECIAL WAR EXPENDITURE, 1914-15 TO 1922-23—*continued*.

Particulars.	1919-20.	1920-21.	1921-22.	1922-23. (Estimate).
	£	£	£	£
Special expenditure on Expeditionary and Australian Forces—				
Naval	2,451,078	698,052	157,884	175,000
Military	18,022,258	1,019,110	Cr. 57,806(b)	165,893
Interest due to Government of United Kingdom for maintenance of Australian troops at the Front	1,816,000	1,743,264	(a)	(a)
Interest on loans from Government of United Kingdom for War purposes	2,377,656	2,290,460	(a)	(a)
Sinking Fund on loans from Government of United Kingdom	245,410	490,820	(a)	(a)
Interest on Australia's War Indebtedness to Government of United Kingdom .. .. .	..	..	4,529,971	4,484,137
Payment in reduction of principal of Australia's War indebtedness to the Government of the United Kingdom	10,268,246	11,270,983	1,012,360	1,064,673
Interest on Commonwealth War Loans	..	..	12,324,208	12,829,000
Interest on War Gratuity Bonds and Treasury Bills for War Gratuity purposes	224	1,149,361	1,221,514	1,110,000
Sinking Funds on loans for War purposes	1,067,402	2,678,000	1,987,640	1,095,000
Amount transferred to Trust Fund, Australian Soldiers' Repatriation Account	5,170,737	3,384,845	1,957,835	1,570,000
War Pensions (including Administrative expenses)	6,032,270	7,389,739	7,028,329	6,750,000
Advances to States and Territories for purpose of settling returned soldiers on the land	10,155,675	15,182,878	6,482,384	6,000,000
Expenditure under War Service Homes Act 1918	4,718,158	6,594,164	1,247,466	4,000,000
Trading Vessels	143,274	527	6,612	2,000
War Gratuity	685,008	8,035,066	2,191,772	2,500,000
Miscellaneous	7,668,930	3,551,531	1,015,744	560,631
Total	70,822,326	65,469,800	41,105,913	42,306,334

(a) An agreement has been entered into between Australia and the Government of the United Kingdom whereby war debts due to the latter by Australia have been funded, and the amount due for maintenance of Australian troops at the front and loans made to Australia for war purposes are included in this agreement. Provision is also made for half-yearly payments in reduction of the principal of Australia's War indebtedness to the Government of the United Kingdom.

(b) Credit resulting from repayment of expenditure made in previous years.

(iii) *Naval, Military, and Air Expenditure 1901-2 to 1922-23.*—In the following table Defence expenditure for the whole Commonwealth period 1901-2 to 1921-22, and the estimate for the year 1922-23 are given:—

ANNUAL DEFENCE EXPENDITURE, 1901-2 TO 1922-23.

Year.	Naval.		Military.		Air.		Total Defence Expendi- ture. (a) (b)
	Under Ordinary Votes and Appropriations.	Total Naval. (a)	Under Ordinary Votes and Appropriations.	Total Military. (a)	Under Ordinary Votes and Appropriations.	Total Air. (a)	
	£	£	£	£	£	£	£
1901-2	178,819	178,819	777,620	780,260	..	..	959,079
1902-3	149,701	149,701	595,115	600,652	..	..	750,353
1903-4	240,005	240,091	502,517	615,673	..	..	855,764
1904-5	200,394	206,036	533,945	728,562	..	..	934,598
1905-6	250,273	252,016	548,439	718,329	..	..	970,345
1906-7	255,120	256,066	585,516	779,729	..	..	1,035,795
1907-8	259,247	510,205	634,579	824,539	..	..	1,334,744
1908-9	263,207	267,262	686,365	783,330	..	..	1,050,592
1909-10	269,051	329,739	928,393	1,205,666	..	..	1,535,405
1910-11	303,493	1,465,034	1,092,305	1,540,992	..	..	3,006,026
1911-12	461,546	1,634,466	1,667,103	2,443,382	..	4,000	4,081,848
1912-13	806,881	1,560,616	1,805,806	2,680,466	3,072	5,223	4,346,305
1913-14	1,006,424	1,987,101	1,944,297	2,756,404	3,012	8,795	4,752,300
1914-15	1,526,251	6,821,091	1,477,878	12,715,471	6,742	18,217	19,554,779
1915-16	1,550,012	8,470,036	1,512,343	37,444,879	10,503	46,162	45,961,077
1916-17	1,510,542	6,641,249	1,544,775	59,364,998	12,156	36,758	66,043,005
1917-18	1,544,590	3,766,174	1,283,063	66,884,734	14,660	29,096	70,880,004
1918-19	1,650,375	9,435,658	1,392,859	77,431,327	4,151	135,686	87,002,671
1919-20(b)	1,728,327	5,645,374	1,163,792	68,102,458	26,813	Cr. 34,880	73,712,952
1920-21(b)	2,550,609	3,658,589	1,615,933	59,300,435	62,888	139,926	63,098,950
1921-22(b)	2,330,965	3,167,736	2,126,006	41,771,436	155,082	285,686	45,224,858
1922-23(b) (Estimated)	2,200,042	2,713,409	1,871,203	41,533,069	266,412	413,997	44,660,475

(a) During the war years and subsequently, war expenditure and war expenditure on work included in total. (b) Not including War Gratuity (see p. 630).

NOTE.—In the year 1900-1 the approximate Defence Expenditure made by the States was:—

Ordinary Services	£800,000
Works, Arms, Equipment, etc.	200,000
Total	£1,000,000

(iv) *Expenditure in Various Countries.* The total expenditure on defence and the expenditure per inhabitant in various countries according to estimates made immediately prior to the late war and for 1922-23 are as follows :—

**ESTIMATED PRE-WAR AND POST-WAR EXPENDITURE ON DEFENCE.—
VARIOUS COUNTRIES.**

Country.	Year.	Total Expen- diture.	Per Inhabitant.	Year.	Total Expen- diture.(c)	Per Inhabitant.
		£	s. d.		£	s. d.
Great Britain ..	1913-14	77,179,000	33 9	1922-23	138,079,000	56 10
Germany ..	1913-14	97,845,000	30 2	1922-23	3,055,000	1 0
France ..	1913	56,738,000	28 7	1923	87,764,000	44 9
Italy ..	1913-14	23,614,000	13 7	1922-23	22 207,000	11 1
Austria-Hungary..	1913	19,600,000	7 8	1921-22	(a)3 546 000	11 6
Switzerland ..	1913	1,772,000	9 1	1923	3,321,000	17 1
Russia ..	1913	86,953,000	10 5	(b)	(b)	(b)
Spain ..	1913	9,218,000	9 3	1922-23	17,802,000	16 8
Portugal ..	1913-14	3,041,000	10 3	1922-23	1,665,000	5 11
Norway ..	1913-14	1,204,000	9 11	1922-23	2,162 000	16 4
Sweden ..	1913	4 510,000	16 0	1922	7,195,000	24 2
Denmark ..	1913-14	1,625,000	11 5	1922-23	2,081,000	12 8
Holland..	1913	4,458,000	14 6	1923	5,604,000	16 4
Belgium ..	1913	3,260,000	8 7	1922	9,898,000	25 9
United States ..	1913-14	64,537,000	14 0	1922-23	147,310,000	27 10
Canada ..	1912-13	1,872,000	5 2	1922-23	3,263,000	7 3
Japan ..	1913-14	12,039,000	3 6	1922-23	37,405,000	13 4
Australia ..	1913-14	4,752,000	19 5	1922-23	4,854,000	17 3
New Zealand ..	1913-14	539,000	9 11	1922-23	719,000	10 10

(a) Austria. (b) Not available. (c) Excluding expenditure in connexion with the late War.

§ 5. Industrial Establishments and Remount Depot.

1. Commonwealth Factories.—(i) *Number and Staff.* The creation of Australian sources for the supply of munitions of war was found to be a necessary undertaking, and the administration of the various factories required for the production of war materials was allotted to the Munitions Supply Board, of which the Defence Contract and Supply Board forms a part. Six factories were thus established under the authority of the Defence Act in connexion with the Defence Department. The Commonwealth Harness, Saddlery, and Leather Accoutrements Factory at Clifton Hill, Victoria, was opened in September, 1911. On 30th June, 1922, there were 40 persons employed, including 12 females. A large quantity of harness and saddlery, leather and canvas equipment has been turned out for the Defence and other Commonwealth and State Departments. At the Cordite Factory at Maribyrnong, Victoria, cordite is manufactured for the cartridges required for military purposes. On 30th June, 1922 the employees numbered 62. The Acetate of Lime Factory at Bulimba, Brisbane, which manufactured acetate of lime (a raw material used in the production of acetone), commenced operations in September, 1918. On 30th June, 1922 there were 13 persons employed. This factory is worked in conjunction with the Cordite Factory. The Clothing Factory at South Melbourne, Victoria, commenced operations on 3rd January, 1912. Since 1st July, 1912, a satisfactory output has been maintained. The number of employees on 30th June, 1922 was 174, of whom 124 were females. The establishment is able to supply the whole of the uniform clothing required for the Defence Forces and the Postmaster-General's Department, and much of that required by State Departments and local governing bodies. The Small Arms Factory at Lithgow, New South Wales, was opened on 1st June, 1912. The first instalment of Australian arms was delivered in May, 1913. Employees numbered 248 on 30th June, 1922. The Commonwealth Woollen Cloth Factory was established at Geelong, Victoria, for the supply of uniform materials and woollen fabrics, and commenced operations in the latter part of 1915; 321 persons, including 151 females, were employed on the 30th June, 1922, since which date the factory has been sold.

(ii) *Expenditure.* The expenditure up to 30th June, 1922, on land, buildings, machinery and plant, factory fittings and furniture in connexion with the factories now in operation was approximately as follows:—Small Arms Factory, £379,985; Cordite Factory, £298,337; Clothing Factory, £36,444; Harness Factory, £20,493; Woollen Cloth Factory, £205,177; Acetate of Lime Factory, £150,464.

2. *Remount Depot.*—The Act of 1910 authorized the establishment and maintenance of remount depots, farms, and stations for the breeding of horses. A few thoroughbred stallions are maintained by the Department for the service, at a low fee, of approved privately-owned mares. The horses are maintained primarily to supply the requirements of the Field Artillery Batteries, but are also available for the use of other mounted units. Remount depots have been purchased or are leased in each of the military districts, veterinary hospitals have also been established, and stables have been built in all States. A remount section of the Army Service Corps has been formed for the purpose of breaking, training and looking after remounts generally. These sections were so organized as to be capable of rapid expansion in case of emergency, and when war was declared in 1914 little difficulty was experienced by the remount Service in coping with the enormous task of obtaining and training horses for the mounted units of the A.I.F. and in providing for the shipment of horses to Egypt and India as required.

§ 6. Australian Contingents.

1. *General.*—In previous issues of the Year Book an account was given of the composition, etc., of the Australian contingents despatched for service in the New Zealand and Sudan Campaigns, in South Africa, China, and the Great War of 1914–18 (see Official Year Book No. 12, pp. 1019 *et seq.*). Owing to limits of space, however, this information has not been repeated in the present issue.

2. *Australian Troops (Great War).*—(i) *General.* The troops despatched from Australia for service in the various theatres of the Great War numbered 329,883.

(ii) *Percentages of Enlistments at each Age.* The percentage at each age at enlistment of those who embarked for service overseas was as follows, viz. :—

ENLISTMENTS.—PERCENTAGE AT EACH AGE.

Age at Enlistment.	Percentage.	Age at Enlistment.	Percentage.	Age at Enlistment.	Percentage.
18	7.08	28	3.85	37	1.54
19	7.69	29	3.50	38	1.37
20	8.30	30	3.15	39	1.22
21	8.92	31	2.84	40	1.06
22	7.78	32	2.58	41	0.95
23	6.73	33	2.33	42	0.87
24	6.03	34	2.13	43	0.86
25	5.33	35	1.92	44	0.98
26	4.72	36	1.73	45	0.29
27	4.25				

At the date of the Armistice approximately 210,000 members of the A.I.F. were abroad, and by June, 1920, the whole of these troops, with the exception of certain *personnel* remaining for hospital treatment, educational and other purposes, had been returned to Australia. On the 31st March, 1921, the Australian Imperial Force practically ceased to exist with the exception of 150 members of the Graves Service A.I.F. Cadres in Europe and the East. At that date the remaining members of the A.I.F. in Australia, chiefly hospital patients, were discharged and transferred to the Repatriation Department.

(iii) *Casualties.* The number of casualties announced by the Defence Department to the 31st March, 1922, was as follows:—

CASUALTIES IN AUSTRALIAN IMPERIAL FORCE TO 31st MARCH, 1922.

Particulars.	All ranks.
Deaths from wounds or disease	(a) 59,342
Casualties from wounds or gas (gross total)	166,819
Sick (gross total)	87,957
Casualties not specified	(a) 218
Total	314,336

(a) These figures represent actual net totals after all corrections consequent upon erroneous and later advice, etc., have been taken into account. The wounded and sick represent totals reported by cable and are in excess of the actual number of men affected, because many were admitted to hospital more than once.

(iv) *The Expeditionary Force in the Pacific.* The operations against the German colonial troops resulted, within two months, in the capture of the whole of the enemy's possessions in the Pacific. All former German islands south of the Equator (except the Samoan group) are now occupied and administered by the Commonwealth. Those north of the Equator are under Japanese administration.

(v) *The Australian Navy in the War.* In Year Book No. 12, pp. 1025 *et seq.*, an account was given of the part played by the Australian Navy in the War, but owing to limitations of space it has not been possible to reproduce this matter in the present issue.

(vi) *Honours and Decorations.* Honours and Decorations were awarded to members of the Australian Imperial Forces as follows:—V.C., 65 : G.C.M.G., 3 : K.C.M.G., 9 : C.M.G., 149 : K.C.B., 9 : C.B., 42 : K.B.E., 2 : C.B.E., 33 : O.B.E., 125 : M.B.E., 99 : D.S.O., 619 : R.V.O., 2 : R.R.C., 147 : M.C., 2,366 : D.C.M., 1,756 : M.M., 9,926 : M.S.M., 1,176 : A.M., 3 : D.F.C., 58 : A.F.C., 16 : A.F.M., 2 : French, 343 : Serbian, 84 : Belgian, 430 : Russian, 25 : Egyptian, 34 : Montenegrin, 10 : Italian, 37 : Rumanian, 31 : American, 17 : Portuguese, 2 : Hellenes, 18 : Japanese, 1.

(vii) *Engagements in Various Theatres of War.* The Australian Imperial Forces were engaged in the following important actions in the various theatres of war, 1914–1918, viz. :—

1914.

Capture of German New Guinea.

1915.

Defence of Suez Canal : Operations in Western Desert : Mersa Matruh : Gebel Medwa—Landing at Anzac : Gaba Tepe : Krithia : Chessboard : Quinn's Post : Defence of Anzac : Walker's Ridge : Lone Pine : Sari Bair : Hill 60 : The Evacuation.

1916.

Halazin : Bir el Jifjafa : Katia : Bir Salmana : Romani : Bir el Abd : Bir el Mazar : El Arish : Magdhaba—Fromelles : Pozieres : Mouquet Farm : Flers : The Somme.

1917.

Rafa : Gaza : Beersheba : Tel el Sheria : Ramleh : Ludd : Jaffa : Jerusalem—Stormy Trench : Le Barque : Thillo : Malt Trench : Grevillers : Bapaume : Beaumetz : Lagnicourt : Noreuil : Doignies : Boursies : Hermies : Demicourt : Bullecourt : Messines : Nieuport : The Windmill : Menin Road : Polygon Wood : Broodseinde : Passchendaele.

1918.

Jericho : Jordan Valley : Es Salt : Jenin : Nazareth : Acre : Haifa : Amman : Damascus : Beirut—Dernancourt : Morlancourt : Villers Breto neux : Hazebrouck : Strazeele : Ville-Sur-Ancre : Hamel : Merris : Meteren : Amiens : Vauvillers : Lihons :

Etinehem : Proyard : Herleville : Bray : Clery : Mont St. Quentin : Peronne : Hindenburg Line : Le Verguier : Beauvoir : Le Catelet : Nauroy : Montbrechain : Landrecies.

A specially selected unit was also engaged in the expedition to Baku. In addition a small unit of the flying Corps, and wireless sections, were engaged in Mesopotamia. A small force went to Archangel and the Murman Coast in 1918, and details of the Army Nursing Staff were engaged in Salonica.

§ 7. War Gratuity.

Reference was made in preceding Year Books (see No. 15, p. 930) to the bonus payable in accordance with the War Gratuity Acts of 1920 as a war service gratuity to soldiers and sailors who served in the Great War. Owing to limitations of space this information cannot be repeated, but it may be noted that the gratuity was paid in Treasury bonds, maturing not later than 31st May, 1924, and bearing interest at $5\frac{1}{4}$ per cent. In necessitous cases, payment was made in cash, when desired by the person entitled. The first gratuities were made available about the beginning of June, 1920. The gratuities will total 360,000, the amount being estimated at £28,000,000. By the 30th June, 1923, the sum of £5,762,074 was paid in cash, and bonds to the value of £21,524,539 were issued, of which bonds totalling £8,016,058 have been cashed.

§ 8. Special Defence Legislation.

Information regarding special defence legislation enacted by the Commonwealth Government during the War was given in Official Year Book No. 15, p. 930. It may be pointed out here that the War Precautions Act Repeal Act of 1920 repealed the Act 1914-18, but a limited number of matters dealt with under the original Act are now provided for under the War Precautions Act Repeal Act of 1920 or by regulations made thereunder.

§ 9. Repatriation.

1. **General.**—An outline of the activities leading up to the formation of the Commonwealth Department of Repatriation was given in Official Year Book No. 15, p. 931, but limits of space preclude its repetition in the present volume.

2. **Policy of the Department.**—The policy of the Department is based upon four main principles :—(a) To secure the re-establishment of returned soldiers in the industrial life of the community to the fullest extent that circumstances permit ; (b) to sustain these soldiers until an opportunity for such re-establishment is assured ; (c) to provide for the care and education of the dependents of soldiers who have died on active service, as well as the dependents of soldiers who, on account of injuries sustained, are unable to provide for those formerly dependent upon them ; and (d) to provide medical treatment for nurses, sailors and soldiers who are suffering from disabilities caused or aggravated by war service.

To give effect to these principles the Department undertakes :—

- (1) To secure suitable employment for those who are able to follow their previous occupation or one similar to it, and to pay sustenance until such opportunities are presented ;
- (2) To restore to the fullest degree of efficiency possible, by means of vocational training, those who on account of war service are unable to follow their pre-war occupations, and during the period of such training to assure trainees adequate sustenance ;

- (3) To supply gratis all necessary treatment, surgical aids, and medicaments; all hospital fees, and transport expenses thereto and therefrom, with allowances for certain classes for the period of treatment (where hospital treatment is not feasible the same may be given in the home or in such place as may be approved);
- (4) To provide educational facilities and maintenance allowances for children of deceased and totally and permanently incapacitated soldiers so that they may ultimately engage in agricultural, industrial, commercial or professional occupations;
- (5) To provide a pension to the soldier and his dependents in accordance with the degree of war disability of the soldier.

3. **Activities.**—(a) *Assistance and Employment.* The activities of the Department range over a variety of matters such as employment, vocational training, land settlement, medical treatment, children's education and assistance. Under assistance, establishment in small businesses, furniture loans and grants, educational grants and equipment with tools of trade, and funeral expenses are provided. In co-operation with the State Governments a land settlement scheme has been devised, under which the Federal Government lends the States the necessary money to acquire the estimated number of holdings required, and to construct railways or other works necessary to their successful occupation. Under this scheme the Commonwealth Government will also make available working capital up to £625 per settler. This will afford every soldier possessing the natural aptitude and fitness an opportunity of ultimately owning his own farm. With the exception of South Australia all the States have agreed to extend the benefits of the Land Settlement Scheme to munition and war workers to whom the Commonwealth advance of £625 will be available.

(b) *Treatment of War Service Disabilities.* For disabilities due to or aggravated by war service, discharged nurses, sailors and soldiers are entitled to free medical treatment, dressings, and necessary medicines as well as the supply, renewal and repair of artificial limbs, and surgical aids. The expenses of unavoidable travel for any medical or surgical purposes are defrayed by the Department, together with any necessary expenses in a hospital or other approved place. By arrangement with the Pharmaceutical Societies, upon the production to a pharmacist of the medical officer's prescription, such medicines, lotions or dressings as may be required will be immediately supplied free to the soldier. The following classes of medical treatment are provided for—

- (1) Treatment in hospitals in metropolitan areas for cases where continuity of previous treatment is desirable, which cannot be effectively dealt with in a country hospital.
- (2) Treatment as out-patients in metropolitan areas and country centres.
- (3) Treatment in country hospitals where suitable, or in cases of emergency.
- (4) Treatment in own homes or elsewhere in cases of emergency within country districts.
- (5) Treatment in convalescent homes, hostels, farms, sanatoria, or other special institutions.

4. **Sustenance Rates and Pensions.**—(i) *Sustenance Rates.* The sustenance rate that may be granted to applicants awaiting fulfilment by the Department of certain specified obligations is:—(a) To a soldier without dependents a weekly income inclusive of pension of £2 2s.; (b) To a soldier with a wife, a weekly income inclusive of their combined pensions of £2 17s. An additional allowance of 3s. 6d. per week is made for each child up to four, the maximum sum payable being £3 9s. per week.

Those who are eligible for this benefit are applicants awaiting employment; approved applicants waiting to take up land; trainees in technical schools; and soldiers receiving medical treatment. Vocational trainees with dependents, however, receive higher rates than those mentioned above. The rates payable were increased in October, 1921, in consideration of the fact that owing to industrial depression the period of training, which even under normal conditions is not short, was in many cases prolonged to a greater extent than was originally anticipated would be necessary.

The present sustenance rates for vocational trainees are as follow :—

- (a) To a trainee without dependents a weekly income inclusive of pension of 42s. (similar to above).
 (b) To a trainee with a wife a weekly income inclusive of combined pensions of 60s. An additional allowance of 5s. per week is made for each child up to four, the maximum sum payable being 80s. per week (eligible students training in professional courses may receive £2 2s. per week inclusive of pension).

(ii) *Pensions.* The general pension rates payable to a widow or widowed mother on death of a member of the forces, or to a member, or to the wife of a member, upon his total incapacity, are as follows :—

PENSIONS PAYABLE.—SOLDIERS, DEPENDENTS, ETC.

Rate of Pay of the Member per Day at Date of Death or Incapacity.	Fortnightly Pension Payable to Widowed Mother on Death of Member.	Fortnightly Pension Payable to Widow on Death of Member.	Fortnightly Pension Payable to Member upon Total Incapacity.	Fortnightly Pension Payable to Wife of Member who is Totally Incapacitated.
s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
6 0	2 0 0	2 7 0	4 4 0	1 16 0
7 0	2 3 0	2 7 0	4 4 0	1 16 0
9 0	2 9 0	2 9 0	4 4 0	1 16 0
10 0	2 12 3	2 12 3	4 4 0	1 16 0
10 6	2 13 9	2 13 9	4 4 0	1 16 0
11 6	2 16 0	2 16 0	4 4 0	1 16 0
12 0	2 17 3	2 17 3	4 4 0	1 16 0
13 0	2 19 6	2 19 6	4 4 0	1 16 0
17 6	3 10 0	3 10 0	4 4 0	2 0 0
22 6	3 17 6	3 17 6	4 5 0	2 2 6
30 0	4 9 0	4 9 0	4 15 0	2 7 6
37 6	5 0 9	5 0 9	5 5 0	2 12 6
45 0	5 12 3	5 12 3	5 15 0	2 17 6
50 0	6 0 0	6 0 0	6 0 0	3 0 0

Proportionate pensions are paid to soldiers not totally incapacitated, according to the assessment of their disabilities. In addition to any pension received in accordance with the assessment of the ex-member's disability, special allowances are granted in amputation cases at such rates as are shown in the Fifth Schedule provided for in the Amending Act No. 23 of 1922.

In respect of each child (son, daughter, stepson, stepdaughter, or adopted child under 16 of a member of the forces) :—Twenty shillings per fortnight for the first child, fifteen shillings per fortnight for the second child, and ten shillings per fortnight for the third and each subsequent child, if the father is fully incapacitated ; or *pro rata* on the assessment of the father's pension.

In cases of (a) Widows with dependent children, and (b) Widows without children whose circumstances are such as in the opinion of the Commission justify an increase of the rates specified in this schedule, and whose rate of pension, as specified in column three of this schedule, is less than £4 4s. per fortnight, the Commission may, for such period as it thinks fit, increase the rate of pension to an amount not exceeding £4 4s. per fortnight.

A special rate of pension, amounting to £8 per fortnight, may be granted to members of the forces who have been blinded as the result of war service, and to members who are totally and permanently incapacitated (*i.e.*, incapacitated for life to such an extent as to be precluded from earning other than a negligible percentage of a living wage).

The Commission may grant a pension not exceeding the special rate of pension to any member of the forces who is suffering from tuberculosis, and who has been for at least six months an inmate of an establishment for persons so suffering, and has been discharged from that establishment.

The special rate of pension shall not be payable to any pensioners who are maintained in an establishment at the public expense.

In the case of a member who has been granted the special rate of pension, the wife of such member shall not be entitled to receive a pension exceeding the rate specified above.

The total number of pensions in force was 225,387, and the amount expended at end of June, 1922, was £6,789,365.

5. Summary of Work of Department from 8th April, 1918, to 30th June, 1923.—

The following is a summary of the work of the Department from its inception to the latest available date:—(a) *Employment*.—Number of applications, 238,375, number of positions filled, 129,521: (b) *Vocational Training*.—Vocational training is designed for—(i) Soldiers incapacitated from following their usual occupations; (ii) Apprentices whose indentures were interrupted by war service; (iii) Widows without children. (In cases where a widow with children satisfies the State Board that adequate arrangements can be made for the care of her children during training hours, applications for vocational training may be approved); (iv) Students whose studies were interrupted by war services; (v) Members of the A.I.F. who enlisted under the age of twenty years. Classes representing 95 trades and callings have been established, with results as follows:—Number of men completed training, 21,518; number in training, 7,141. (c) *Assistance other than Vocational Training and Employment*.—Applications received, 516,705; applications approved, 414,641. (d) *War Service Homes*.—The operations of the War Service Homes Commission at 30th June, 1923, may be briefly set out as follows:—23,783 applications involving advances amounting to approximately £15,330,158 had been approved; 7,864 houses had been completed; 102 applicants had been assisted to complete or enlarge dwelling-houses partly owned; 1,250 houses were in course of construction; and 1,427 building applications had been approved in respect of which building operations had not been commenced.

In addition, the Commission had purchased on behalf of eligible applicants 11,514 already-existing properties, and had taken over mortgages existing on 1,758 dwelling-houses, but in a number of cases actual settlement and transfer has not taken place. Applications in respect of 132 completed houses had not, however, been definitely approved, but pending this action the majority of the houses are occupied by the applicants under a weekly tenancy agreement.

The foregoing figures include the operations of the State Bank of South Australia, which is now carrying out the provisions of the War Service Homes Act in South Australia, the Commonwealth's obligation being to make available to the Government as a loan the funds required for the purpose.

(e) *Soldiers' Children's Education Scheme*. With the aid of the leading educational experts of the Commonwealth, a scheme has been devised by which facilities are provided for the instruction of children of deceased and totally and permanently incapacitated soldiers. Provision is made for preparing such children for agricultural, industrial, commercial and professional occupations. Supervision and administration is by Soldiers' Children Education Boards, which have been established in each State.

From the inauguration of the scheme in February, 1921, up to 30th June, 1923, 3,902 applications for assistance had been received. Of these 3,107 had been approved, of which 235 recipients of the benefits had completed their training, 2,572 were attending school or undergoing training, 57 applications were pending, and the remainder had been refused or withdrawn. The trades undertaken include boiler-making, cabinet-making, engineering, saddlery, dress-making, tailoring, book-binding, etc.; whilst the professional students have taken up such courses as arts, science, engineering, theology, medicine, law, pharmacy, teaching and music. Progress reports indicate that the work of the Boards has already achieved a very large measure of success.

It is estimated that the scheme will involve an outlay of £1,250,000, of which the Commonwealth has undertaken to provide £800,000, while it is hoped that the balance will be forthcoming from private and public funds and benefactions. Under the Sir Samuel McCaughey Bequest a large sum was set apart for educational purposes, and the closest co-operation exists between the Commission and the McCaughey trustees by which duplication, overlapping, and unnecessary expenditure will be avoided. Up to 30th June, 1923, the expenditure was £129,566. The estimate for 1922–3 is £57,000.

It is claimed that not only is the well-being of the children concerned being provided for in the most beneficial way, but also that they will, with the progress of time, and as a result of the opportunities now afforded them, equip themselves in such a manner as to bring within their reach positions of high usefulness in the community.

6. Assistance Granted.—The table hereunder shows the sums granted by way of assistance during the period from the inauguration of the Department (8th April, 1918) to 30th June, 1923 :—

**DEPARTMENT OF REPATRIATION.—ASSISTANCE GRANTED, 8th APRIL, 1918,
TO 30th JUNE, 1923.**

Particulars.	Gift.	Loan.	General.	Total.
	£	£	£	£
Expenses in providing employment (including tools of trade and transportation expenses)	2,297,794	19,589	32,106	2,349,489
Vocational training (including sustenance, fares, fees for instruction, books and equipment and training classes)	3,613,171	123,509	914,676	4,651,356
Furniture	74,081	998,237	..	1,072,318
Small businesses	1,661	213,649	4	215,314
Plant	775	172,676	41	173,492
Live stock	70	19,087	..	19,157
Settlers' sustenance and other expenses	549,449	24	16,286	565,759
Homes for blinded soldiers	1,438	..	2,624	4,062
Passages beyond Australia	76,484	66	422,446	498,996
Living allowances (including allowances for homes)	733,648	34,712	3,497	771,857
Educational grants for children	7,753	65	3,361	11,179
Medical treatment (including surgical aids and maintenance of soldiers at institutions not conducted by the Department)	886,306	..	544,682	1,430,988
Funeral expenses	28,463	64	10	28,537
Miscellaneous	35,658	9,001	36,522	81,181
Expenses of allotment	21	5,211	14,498	19,730
Maintenance of medical institutions .. .. .	..	..	637,340	637,340
Grants to local government bodies to provide employment for returned soldiers .. .. .	..	..	450,757	450,757
Grants to local committees for administrative and other expenditure .. .. .	..	..	64,496	64,496
Payments to trainees incidental to advanced training in building trades and other expenses	6,775	..	17,090	23,865
Co-operative businesses .. .. .	..	1,025	..	1,025
Losses by fire on Departmental insurance of furniture loans .. .. .	..	..	719	719
Expenditure under the reciprocal agreement .. .. .	..	..	5,085	5,085
Total	8,313,547	1,596,915	3,166,240	13,076,702

7. Reciprocity Arrangements.—Arrangements have been made with Great Britain, Canada, South Africa, New Zealand, Newfoundland, and the United States of America for the provision of medical treatment and certain other benefits for Australian soldiers who are residents of the countries mentioned, and similar benefits to ex-soldiers of these countries domiciled in Australia.

8. Settlement of Soldiers on the Land.—At the Premiers' Conference in Melbourne in 1917 it was agreed that the States should undertake the work of settling soldiers on the land, but that the Commonwealth should finance them for this purpose.

The classes of persons entitled to assistance as land settlers are :—

- (1) Members of the Australian Expeditionary and Naval Forces ;
- (2) Members of the Naval and Military Forces of any part of the King's Dominions other than the Commonwealth if they resided in Australia prior to enlistment ;
- (3) Munition workers and war workers who left Australia under engagement with the Imperial Government to undertake war work.

The original arrangement provided that the Commonwealth should take the responsibility of finding up to £500 per settler as working capital for improvements, implements, seed, etc., an amount which was subsequently increased to £625 per settler.

At the Premiers' Conference in January, 1919, definite proposals were put forward by the States at the request of the Commonwealth Government, and the latter agreed to finance the States to the extent shown in the following table :—

PROVISION FOR SOLDIER SETTLEMENT, 1919.

State.	No. of Settlers.	Advances to Settlers.	Land Resumption.	Public Works.	Total.
	No.	£	£	£	£
New South Wales	8,405	5,253,125	1,208,408	5,792,658	12,254,191
Victoria	5,395	3,721,875	6,592,500	..	10,314,375
Queensland	2,826	1,766,250	200,000	415,664	2,381,914
South Australia	1,729	1,080,625	1,351,346	600,000	3,031,971
Western Australia	3,100	1,937,500	500,000	2,162,500	4,600,000
Tasmania	1,556	972,500	1,251,944	13,898	2,238,342
Total	23,011	14,731,875	11,104,198	8,984,720	34,820,793

As the number of applicants exceeded the estimates, the States sought further assistance from the Commonwealth. The basis of the agreement arrived at (Premiers' Conference, July, 1920) was that the Commonwealth Government should advance the States a flat rate of £1,000 per settler—£625 per settler (on the average) as working capital, and £375 per settler (on the average) for resumptions and works incidental to land settlement approved by the Commonwealth.

The numbers provided for to the 30th June, 1922, were as follow :—

SOLDIER SETTLEMENT, 30th JUNE, 1922.

State.	Quota to be Settled under Original Agreement.	No. Settled to 30th June, 1922.
	No.	No.
New South Wales	8,405	6,136
Victoria	5,395	8,871
Queensland	2,826	3,977
South Australia	1,729	2,394
Western Australia	3,100	3,905
Tasmania	1,556	2,585
Total	23,011	27,868

The amounts reimbursed to the State Governments by the Commonwealth to the 30th June, 1922, are as follow :—

	£
New South Wales	9,826,203
Victoria	11,968,176
Queensland	2,579,451
South Australia	2,586,972
Western Australia	4,083,782
Tasmania	2,108,688
Total	£33,153,272

Prior to the occupancy of the land, the Repatriation Department may pay sustenance for a limited period subject to certain conditions, and during the first two years of occupancy sustenance may be paid for six months while awaiting actual production.

The fares of a man and his family to his place of settlement are paid by the Repatriation Department, and a limited amount is allowed towards the cost of removal of his household effects.

Where men are given rural training, the cost of maintenance is shared between the State Lands Department and the Repatriation Department acting on behalf of the Commonwealth.

9. **Conspectus of State Laws affecting Settlement of Returned Soldiers on the Land.**—In Official Year Book No. 13, pp. 1018 *et seq.*, will be found a table giving particulars of the laws of the various States relating to returned soldiers' land settlement.

Later modifications have been made with a view to simplifying procedure, and liberalizing the conditions under which holdings may be acquired.

CHAPTER XV.

THE TERRITORIES OF THE COMMONWEALTH.

A. GENERAL.

1. **Classification.**—The Territories of, or under the control of, the Commonwealth, are of three classes—

- (a) Territories originally parts of the States which have been surrendered by the States to the Commonwealth. These are the Northern Territory (formerly part of the State of South Australia) and the Federal Capital Territory (formerly part of the State of New South Wales).
- (b) Territories, not parts of States, which have been placed under the authority of the Commonwealth by Order in Council under section 122 of the Constitution. These are Papua and Norfolk Island.
- (c) Territories which have been placed under the administration of the Commonwealth by Mandate issued by the League of Nations. These are the Territory of New Guinea and (administered in conjunction with the British and New Zealand Governments) Nauru.

Only the Territories in class (a) are parts of the Commonwealth.

2. **Forms of Executive Government.**—The Territories differ in their forms of Government. Papua is administered by a Lieutenant-Governor and a nominated Executive Council, who, except in matters of high policy and in certain matters prescribed by law, are not controlled by the Commonwealth Government; the Northern Territory, Norfolk Island, and the Territory of New Guinea are each under an Administrator who is controlled by the Commonwealth Government; in the Federal Capital Territory, such local institutions as existed under the law of New South Wales continue, and no other provision for Executive Government has yet been necessary; in Nauru the Executive Government is vested in an Administrator who is subject only to the general control of the Government controlling the Administration.

3. **Legislative Power.**—The laws of the Parliament of the Commonwealth are in force in the Territories which are parts of the Commonwealth, but are not applicable to the Territories not parts of the Commonwealth unless expressly extended thereto.

In Papua, there is a nominated Legislative Council, which has full power of legislation, subject to the assent of the Governor-General. In New Guinea, the Northern Territory,* Norfolk Island and the Federal Capital Territory, there are no Councils, and Ordinances are made for these Territories by the Governor-General, subject to such Acts of the Parliament of the Commonwealth as are in force there; but most of the Ordinances of the Northern Territory, Norfolk Island, and New Guinea give power to the Administrators to make any regulations necessary for giving effect to them.

In Nauru the legislative power is vested in the Administrator, subject to instructions from the Government controlling the Administration.

4. **Laws.**—In the Northern Territory, Papua and Norfolk Island, the laws existing at the date these territories came under the control of the Commonwealth have remained in force, subject to later legislation by or under the authority of the Commonwealth Parliament; in the Federal Capital Territory there remain in force most of the laws of the State of New South Wales; in New Guinea, the former German law was repealed at the date of the establishment of civil government.

* In the Northern Territory there is an Advisory Council.

Three volumes containing the "Statute Law of the Territory of Papua" in force on 31st December, 1916, were published by the Government Printer, Port Moresby, in 1918 and 1919; subsequent Ordinances and the regulations under Acts and Ordinances are published in the *Government Gazette* of Papua and in annual volumes. The South Australian statutes in force in the Northern Territory will be found in the collected editions and annual volumes of the State of South Australia; Ordinances made by the Governor-General in the *Commonwealth of Australia Gazette*, and regulations under Ordinances in the *Northern Territory Gazette*. The laws in force in Norfolk Island at the time of its coming under the control of the Commonwealth were collected in the *New South Wales Government Gazette* of 24th December, 1913, and printed separately as "The Consolidated Laws of Norfolk Island"; Ordinances made by the Governor-General, and regulations made by the Administrator, are published in the *Commonwealth of Australia Gazette*. Ordinances made by the Governor-General for the Federal Capital Territory are published in the *Commonwealth of Australia Gazette*. Ordinances made by the Governor-General for the Territory of New Guinea are published in the *Commonwealth of Australia Gazette*, and Regulations made by the Administrator in the *New Guinea Gazette*; the statute law in force in New Guinea on 31st December, 1922, has been published as Vols. I.-III. of "Laws of the Territory of New Guinea," and subsequent Ordinances and regulations will be collected in annual volumes. Ordinances made by the Administrator of Nauru are promulgated locally and are printed in the annual report to the League of Nations on the Administration of Nauru.

5. **Finances.**—Papua is autonomous in its finances, but receives an annual grant from the Commonwealth Government. The Administration of the Northern Territory is maintained by the Commonwealth Government; a grant is made towards the expenses of administration of Norfolk Island, but taxes are raised locally which meet part of the expenditure; expenditure in the Federal Capital Territory is defrayed by the Commonwealth; New Guinea has its own budget, and the local revenues have hitherto been sufficient to maintain the Administration; Nauru is self-supporting.

The sum appropriated by the Commonwealth Parliament in 1921-22 for the Territories outside the Commonwealth was £87,563, exclusive of £49,167 for mail services to these Territories and to other islands in the Pacific.

B. THE NORTHERN TERRITORY.

§ 1. Area and Population.

1. **Introductory.**—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was incorporated in that colony (see Chapter I.), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

2. **Area and Boundaries.**—The total area of the Territory is 523,620 square miles, or 335,116,800 acres. Its length from north to south is about 900 miles, while its breadth from east to west is 560 miles. Its eastern boundary, dividing it from Queensland, is the 138th meridian of east longitude; and its western boundary, separating it from Western Australia, the 129th meridian. Its southern boundary is the 26th parallel of south latitude, dividing it from South Australia. The northern boundary is the coast line of those parts of the Indian Ocean known as the Timor and Arafura Seas. Near the mouth of the Wentworth River, in the Gulf of Carpentaria, the coast line is met by the eastern boundary; at Cape Domett, near Cambridge Gulf, the western boundary cuts the northern coast line. The length of coast line is about 1,040 miles, or 503 square miles of area to one mile of coast line; an exact survey has, however, not yet been made.

3. **Population.**—(i) *Nationality.* In 1881 there were 670 Europeans in the Territory, and at the end of 1913 the number was estimated at 2,143. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the number recorded at the census of 1921 being only 475. Japanese, first

recorded in 1884, increased up to the year 1898, falling again after five years, the number at the census of 1921 being 34. The highest recorded population, excluding aborigines, was 7,533 in 1888; in 1922 it was 3,554. The estimated population for the last five years is given in the following table :—

**NORTHERN TERRITORY.—POPULATION (EXCLUSIVE OF ABORIGINES),
1918 TO 1922.**

Year ended 31st December.	Male.	Female.	Total.
1918	3,499	1,141	4,640
1919	3,376	1,171	4,547
1920	2,911	1,081	3,992
1921	2,718	1,019	3,737
1922	2,540	1,014	3,554

The Census population (4th April, 1921) was 2,821 males, 1,046 females, total, 3,867.

(ii) *Movement of Population.* The following is a summary of movement of population in 1922 (excluding overland migration) :—

NORTHERN TERRITORY.—MOVEMENT OF POPULATION, 1922.

Inwards	406	Outwards	599	Excess of immigration over emigration ..	—193
Births	70	Deaths	60	Excess of births over deaths ..	+10
Increase	476	Decrease	659	Net result ..	—183

NOTE.—(—) signifies decrease.

The immigration and emigration of the Territory for the five years ending in 1922 are shown in the following table :—

NORTHERN TERRITORY.—MIGRATION, 1918 TO 1922.

Year.	Immigration.	Emigration.
1918	1,259	1,450
1919	1,159	1,273
1920	606	1,161
1921	516	770
1922	406	599

(iii) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay-Smith, was given in Year Book No. 3 (pp. 158–176). It is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the Census of 1921, full-blood aboriginals in the employ of whites and those who were living in a civilized or semi-civilized condition in the vicinity of European settlements were enumerated—the males being 1,184, females 866; total 2,050. The aggregate of the estimates supplied by officers of the Police Department who acted as Census collectors, and are in close contact with the aboriginal population, was 17,349. The interests of the natives are looked after by a Protector of Aborigines, with head-quarters in Darwin. On 30th June, 1921, aboriginal reserves and mission stations in existence, or proposed, covered an area of over 34,000 square miles. The

greatest difficulty which confronts the Administration in dealing with the natives is due to the circumstance that they are nomads without fixed abode, merely wandering about hunting for native food within the limits of their tribal boundaries, and making no attempt at cultivation or other settled industry. In their natural state, compared with those of other tropical countries the natives are very healthy, but in contact with new settlers, white or Chinese, they rapidly fall victims to disease, and to degradation from drink or opium.

§ 2. Legislation and Administration.

1. **Transfer to Commonwealth.**—(i) *The Northern Territory Acceptance Act.* A short historical sketch is given in Year Book No. 6, pp. 1113–4. On 1st January, 1911, the Territory was transferred by South Australia to the Commonwealth, upon terms previously agreed upon by the respective Cabinets, and ratified by the Commonwealth *Northern Territory Acceptance Act* (No. 20 of 1910). The terms were outlined in Official Year Book No. 15, page 940.

(ii) *The South Australian Surrender Act.* The State Act approved and ratified the agreement surrendering the Territory.

(iii) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorizing the appointment of an Administrator and officials. South Australian laws are declared to continue in force as laws of the Territory, and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

2. **Administration.**—A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

3. **Northern Territory Ordinances.**—(i) *General.* The main provisions of the Ordinances passed are as follows:—The powers and duties of the Administrator vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. A Supreme Court with original and appellate jurisdiction is instituted, the method of appointment of the Judge is prescribed, and provision is made for trial by jury, and for the registration and summoning of jurors. A Sheriff, a Registrar-General, and a Health Officer are provided for, also the registration of births, marriages and deaths, and of deeds and documents. Custody and control of aborigines, with extensive powers of supervision, are vested in the Chief Protector. Provision is made for the control of fisheries. Birds protected during the whole or part of the year are scheduled. Crown lands are classified, and their mode of acquisition, entry and holding defined. The prevention and eradication of diseases in plants have been provided for. Under the Stock Diseases Ordinance the Chief Inspector of Stock has wide powers in regard to the movements of stock, prevention and control of diseases, etc. Shop assistants are to have a weekly half-holiday, and the establishments must be closed at a certain time. A town council has been constituted for Darwin, and provision made for assessments, rates, etc. Mining is encouraged by the provision of rewards for the invention of new processes and the discovery of valuable deposits and of new mineral fields; subsidization of the industry and the issue of prospecting licences are also provided for. Licences to search for mineral oil, and leases for working, are available. Provision has been made for the granting of leases for oyster culture. A Board is constituted for the purpose of making advances to settlers who intend to improve and stock their holdings, to purchase farm implements, plant, etc., or to pay off mortgages, the rate of interest and terms of repayment being set out. Advances in aid of the erection of workmen's dwellings have also been provided for. A Council of Advice has been appointed, consisting of a chairman and seven members—four being non-official—the object of the Council being to advise the Minister on matters affecting the welfare of the Territory. Provision has been made for the compensation of injured workers, for controlling the sale, etc., of necessary commodities, for the appointment of a public trustee, and for amendment of the "Taxation Act 1884" of South Australia in its application to the Territory. A new

Land Ordinance was passed in May, 1923, which repealed the then existing Ordinances. Reference to this Ordinance is made in Chapter V.—Land Tenure and Settlement. Reference to the Liquor Ordinance will be found hereunder

(ii) *Liquor Traffic*. By the Liquor Ordinance of 1915–21 the Commonwealth Government controls the importation of liquor into that part of the Territory which is situated to the north of the 15th parallel south latitude. The hotels situated there are owned by the Government; but have been leased to private persons. There is a liquor store at Darwin also three hotels, and hotels at Pine Creek and the Katherine. The Department directs its energies to the minimizing of excessive drinking and the prevention of illicit trading in intoxicants.

4. *Representation in Commonwealth Parliament*.—Section 122 of the Commonwealth Constitution provides that “the Parliament may make laws for the government of any territory . . . and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.” In pursuance of this provision an Act has recently been passed whereby the Northern Territory elects a member to the House of Representatives. As this member will represent a very small number of electors, he is not entitled to vote, but may take part in any debate in the House.

§ 3. Physiography.

1. *Tropical Nature of the Country*.—The Territory is within the torrid zone, with the exception of a strip $2\frac{1}{2}$ degrees wide, which lies south of the Tropic of Capricorn.

2. *Contour and Physical Characteristics*.—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1,000 miles is indented by bays and inlets, and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66; the rivers in Year Book No. 2, p. 76; the mountains in Year Book No. 3, p. 67; the lakes in Year Book No. 4, p. 77; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in Year Book No. 6, p. 65.

Inland, the country generally is destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent, the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

§ 4. Climate, Fauna and Flora.

1. *The Seasons*.—There are two main climatic divisions—the wet season, November to April, and the dry season, May to October, with uniform and regular changes of weather. Nearly the whole of the rainfall occurs in the summer months. Fuller particulars will be found in Year Book No. 6, p. 1116.

2. *Fauna*.—The ordinary types of native Australian fauna inhabit the Territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of freshwater fish and littoral mollusca. Butterflies and beetles are strongly represented. The white ant is a pest, anthills in the Territory sometimes attaining great dimensions. Mosquitoes and sandflies are very troublesome, particularly in the wet season. Native fauna are in some cases protected. The domesticated animals have been introduced, and buffalo formerly existed in large herds, but their numbers have been greatly depleted by indiscriminate shooting in recent years.

3. **Flora.**—The vegetation is North Australian in type, but a number of the forms belong to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's edge. On the wide expanses of plain country in the interior there is little vegetation. The principal orders represented in the Territory are:—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116–7.

§ 5. Production.

1. **Agriculture.**—Up to the present, agriculture has made little progress in the Territory, although it has been demonstrated that rice may be grown as an ordinary crop suitable for chaff as fodder, and in certain situations for milling; while maize, cowpeas, sorghum, amberscane, millets of various kinds, and sugar-cane can also be cultivated. The drawbacks to success at the present are lack of suitable labour, deficient means of communication, and periodicity of the rainfall. Purely tropical products such as cotton, tea, coffee, sisal hemp, and cigar tobacco can flourish, but their profitable cultivation depends on a supply of cheap labour, which is unobtainable. The Commonwealth Government established demonstration farms at Daly River and Batchelor, but these have been converted into aboriginal compounds. During the dry season considerable trouble is caused by the depredations of white ants.

2. **Live Stock.**—(i) *Distribution.* The spacious, well-grassed “runs” of the Territory are, with adequate water supply, suitable for horse and cattle breeding. According to the Report of the Acting Administrator, the area under pastoral lease on the 30th June, 1922, was 186,086 square miles. Large numbers of cattle are overlanded to neighbouring States, which also take considerable quantities of horse hides. Five gazetted stock routes aggregate a distance of 2,121 miles, and with the completion of the present contract for bores there will be a good supply of permanent water thereon. There are Government cattle stations at Oenpelli (2,000 square miles), and Mataranka (864 square miles), carrying altogether about 2,300 cattle and 275 horses, these figures representing only about one-fifth of the present estimated capacity of the stations.

An experiment with sheep on Mataranka station was not very successful owing to unsatisfactory lambing and the dingo and hawk pests, and the flock was disposed of to a private purchaser. The estimated number of stock in the Territory on the 31st December, 1921, is given in the appended statement:—

NORTHERN TERRITORY.—LIVE STOCK, 31st DECEMBER, 1921.

Horses.		Cattle.		Sheep.		Pigs.
39,565	..	568,031	..	6,349	..	452

In 1921 there were also 19,385 goats, and small numbers of camels, mules, and donkeys.

The dairying industry has not been developed, although it has been shown that it is possible to make butter of good quality. A sample from Oenpelli has been very favourably reported on by the Chief Dairy Produce Expert. It is found that the rank indigenous grasses in some localities are greatly improved by constant stocking, and become largely replaced by shorter and sweeter varieties.

Herds of wild buffaloes are found on the main land and on Melville Island, and are descendants of swamp buffaloes, introduced in the early part of last century. The numbers have, however, been greatly depleted by buffalo shooters. During the 25 years ending in 1911 about 4,000 hides per annum were exported. It is stated that the number of buffaloes left in the Territory is now only about 20,000. The flesh of the animal is said to be remarkably free from disease and to equal beef in food value, while buffalo milk is twice as rich in butter fat as ordinary cow's milk.

(ii) *Meat Preserving Works.* By agreement with the Government an extensive meatworks under private ownership was established in the vicinity of Darwin, and commenced operations in April, 1917. During fourteen weeks of that year the number

of cattle treated was 19,000. In 1918 and 1919 operations again started in April and lasted for sixteen weeks in each year, the "kill" in the former year being 29,000, and in the latter 22,000. Owing to difficulties occasioned chiefly by the dearth of shipping the works were forced to close down in 1920.

3. *Mining.*—(i) *General.* Small quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicate scope for development. An important discovery of tin at Maranboy Springs was made in 1913, and this field is now the most productive in the Territory. It is stated that better results could be obtained by amalgamating the smaller properties, and working on a larger scale, with more modern methods. The collapse of the mining industry in the Northern Territory, as shown by the figures below, may be accounted for partly by the serious fall in the metal markets, tin and wolfram in particular, partly by the exhaustion of the easily extracted and richer surface deposits; principally, however, by the utter failure of all efforts to introduce outside capital for development and prospecting purposes.

(ii) *Mineral Production.* Both alluvial and reef gold are found, and other minerals are also raised. The following table shows the total mineral production for the last five years :—

NORTHERN TERRITORY.—VALUE OF MINERAL PRODUCTION, 1917-18 TO 1921-22.

Year.	Gold.	Tin Ore.	Wolfram.	Silver-Lead Ore.	Copper Ore.	Mica.	Total Value all Minerals.
	£	£	£	£	£	£	£
1917-18	2,229	41,432	38,788	200	9,648	..	92,730
1918-19	4,234	30,021	34,805	132	2,349	150	71,697
1919-20	5,282	27,610	45,648	299	780	482	80,101
1920-21	1,299	7,793	9,752	..	..	159	19,003
1921-22	488	5,892	560	..	798	2,170	9,908

(iii) *Miners Employed, 1917-18 to 1921-22.* The following table shows the average number employed in mining during the last five years, distinguishing Chinese :—

NORTHERN TERRITORY.—MINERS EMPLOYED, 1917-18 TO 1921-22.

Year.	Europeans.	Chinese.	Aboriginals.	Total.
1917-18	194	282	68	544
1918-19	194	260	16	470
1919-20	195	250	12	457
1920-21	155	180	8	343
1921-22	89	100	13	202

(iv) *Mining Accidents, 1911 to 1920-22.* In 1911 five mining accidents were recorded, four resulting in death. There were no serious accidents in 1910, 1912, and 1913, and only one, resulting in death, in 1914, and one in each of the years 1915, 1916, and 1917-18. No mining accidents have been recorded since 1918-19. During the nine years preceding (1901-1909), nine fatal accidents and seven cases of serious injury were recorded. The majority of the victims were Chinese.

4. *Pearl, Trepang, and Other Fisheries.*—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Subsequently, however, the opening up of new patches led to a revival, but the outbreak of war gave the industry a setback, owing to the limited demand in the home markets.

During 1921-22, operations have been languishing owing to the low prices of shell and small takes by the boats. The number of boats engaged was only 6, as against 8 the previous year, employing 28 men in all. Seven tons of pearl shell were exported. Trepang fishing has also received a setback owing to a slump in the market.

It may be mentioned that the territorial waters abound in marketable fish, and, given transport facilities, it would be possible to establish a trade in fish dried or otherwise preserved. During 1921-22, 21 persons were licensed, principally Greek.

§ 6. Land Tenure.

A description of the system of land tenure in force in the Territory will be found in Chapter V.—Land Tenure and Settlement.

§ 7. Commerce and Shipping.

1. Trade.—No record is kept of the direction of trade between the Commonwealth States and Territories. The value of the direct oversea trade for 1901 and for each of the years 1917-18 to 1921-22 is given hereunder:—

NORTHERN TERRITORY.—VALUE OF DIRECT OVERSEA TRADE, 1901 AND 1917-18 TO 1921-22.

Items.			1901.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
			£	£	£	£	£	£
Imports	..	..	37,539	32,287	25,140	29,056	19,857	12,115
Exports	..	..	29,191	268,419	377,258	277,627	14,752	5,036
Total	..	..	66,730	300,706	402,398	306,683	34,609	17,151

The principal items of oversea export in 1921-22 were cattle, £2,087; sandalwood, £305; fish, smoked or dried, £2,209; and scrap metals, £235. The large increase in 1917-18 and 1918-19 as compared with previous years is due to the operations of the meat preserving works at Darwin. Owing to the closing down of these works in 1920 the figures for the last two years show a considerable decline as compared with those for the years 1917 to 1920.

2. Shipping.—The Territory is dependent for its shipping facilities chiefly on the services of vessels trading between Sydney and Singapore. Other vessels make occasional visits, while a quarterly service between Fremantle and Darwin is carried out by the "Bambra," belonging to the West Australian State Shipping Service.

NORTHERN TERRITORY.—SHIPPING, 1917-18 TO 1921-22.

Period.				Arrivals.		Departures.	
				No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1917-18	..	..	..	51	115,288	50	107,497
1918-19	..	..	..	43	88,928	42	88,806
1919-20	..	..	..	41	83,086	43	83,264
1920-21	..	..	..	30	65,301	30	65,398
1921-22	..	..	..	32	93,421	30	84,835

The foregoing figures are exclusive of particulars of coastwise shipping. During 1921-22, 44 vessels of 759 tons net were entered as coastwise.

The Government owns a small vessel, the "John Alce," 33 tons.

§ 8. Internal Communication.

1. **Railways.**—Under the agreement ratified by the Act, the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, via Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Darwin to Emungalan, Katherine River, a length of 198.68 miles, of 3 ft. 6 in. gauge. The line to connect Katherine River with Oodnadatta (about 1,012 miles) has been surveyed, the greater part of the survey being exploratory in character. The completion of the gap would permit of the development of the broad belts of pastoral and mineral country towards the centre of Australia. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta (478 miles).

2. **Posts.**—Postal communication is maintained by vessels belonging to Burns, Philp and Co., which maintain a monthly service between the Territory and the Eastern States. In addition, the vessels belonging to the State Steamship Service of Western Australia give a service once every 60 days between Fremantle and Darwin. Inland, the northern part of the Territory receives its mail via Darwin, while the southern districts are served via Adelaide.

3. **Telegraphs.**—The transcontinental telegraph line, covering a length of 2,230 miles, was completed on the 22nd August, 1872, at a cost of nearly half-a-million sterling. The line runs in a northerly direction from Adelaide to Darwin, whence telegraphic communication is provided with Asia and Europe, via Banjoewangie (Java), Singapore, and Madras.

Between Darwin and Banjoewangie the submarine cable is duplicated.

§ 9. Finance.

1. **Revenue and Expenditure, 1921–22.**—In the Commonwealth finance statements separate accounts are given for Northern Territory administration. The following shows the receipts and expenditure for the financial year :—

REVENUE AND EXPENDITURE.—NORTHERN TERRITORY, 1921–22.

REVENUE.	£	EXPENDITURE.	£
Customs and Excise ..	4,526	Salaries and Contingencies ..	119,497
Postal, Telegraph, and Telephone	7,605	Darwin-Katherine Railway—	
Darwin-Katherine River Railway	14,370	Working Expenses ..	24,440
Territorial	20,076	Melbourne Administrative Services	3,822
Land and Income Tax ..	9,719	Royal Commission	399
Quarantine	50	Interest and Sinking Fund, Commonwealth Stock, issued for Redemption of Loans, Railway Construction, etc.	5,380
Lighthouses and Light Dues ..	738	Interest on Treasury Bills, issued for Redemption of Loans, Railway Construction, etc.	9,461
Stamp Duties	4,983	Interest and Sinking Fund, Northern Territory Loans ..	90,784
Miscellaneous	9,172	New Works, Artesian Bores, Roads, etc.	17,859
Deficiency on year's transactions	217,823	Miscellaneous	17,420
Total	289,062	Total	289,062

2. **Northern Territory Debt.**—The items making up the total debt of the Territory as at 30th June, 1922, are as follows:—

	£	£
Debt at date of transfer to the Commonwealth, 1st January, 1911		3,931,086
Redeemed under Commonwealth Loan Acts ..	1,261,167	1,721,792
Redeemed from Consolidated Revenue ..	460,625	
Balance, 30th June, 1922		2,209,294

In addition, the balance of the Port Augusta–Oodnadatta Railway Loans taken over from South Australia amounted at the same date to £1,742,452, making a total of £3,951,746. Under the provisions of the “Northern Territory Acceptance Act 1910” a sinking fund has been established in connexion with the transferred loans.

C. THE FEDERAL CAPITAL TERRITORY.

1. **Introductory.**—In Year Books Nos. 4 and 5, information was given in Section XXXI. as to the events leading to the selection of the Federal Capital Territory, and as to the necessary legislation and the progress of operations in connexion with the establishment of the capital city. The physiography of the Territory was dealt with *in extenso*, and topographical and contour maps accompanied the letterpress, as well as reproductions of the premiated designs for the laying out of the city. Considerations of space, however, preclude the repetition of this information. On the 12th March, 1913, the official ceremony to mark the initiation of operations in connexion with the establishment of the Seat of Government was carried out. At this ceremony the selection of “Canberra” as the name of the capital city was announced.

2. **Progress of Work.**—After an International Competition, a design for the lay-out of the capital city was approved, and steps were taken to commence the construction in accordance therewith.

The survey of the main axial lines was completed, and areas for initial development were subdivided. A scheme for water supply by impounding water on the Cotter River was completed. The construction of an outfall sewer was undertaken, as well as the formation of the principal avenues. An Afforestation Branch was established which made exhaustive experiments in regard to the varieties of trees that would be suitable for street, park and forest planting. These activities were greatly curtailed in 1916, and practically suspended until the year 1920.

In the early part of 1921, “with a view to enabling the Federal Parliament to meet, and the Central Administration of the Commonwealth Government to be carried on as early as practicable at Canberra,” the Governor-General in Council approved of the appointment of a Committee of five, consisting of architectural and engineering experts, to inquire into and advise upon the works already executed and the data available, and to submit a scheme for progressive construction of the city. The Committee submitted a scheme of construction involving an expenditure of approximately £2,000,000, the main principles of which—that owing to the necessity for economy, buildings and works of a monumental character be deferred, and that Parliament House and other Governmental buildings be of a provisional character—were adopted by the Government and work has since proceeded in accordance with this scheme.

The construction of main avenues and roads according to the approved plan has been resumed, and many miles have been formed, and a considerable portion metalled or gravelled.

Certain portions of the residential areas for initial settlement have been developed, and engineering services such as roads, sewerage, drainage and water supply from the Cotter scheme are being provided. The water supply and sewerage have been so

arranged as to connect up with the main city services when completed. These services are being actively undertaken. A water supply service reservoir is being provided on Mt. Russell, and mains through the city are being laid. The construction of the main outfall sewer is well advanced, and a commencement has been made with the intercepting sewers within the city boundary; a large storm-water channel has been constructed along the foot of Mt. Ainslie to protect the northern residential area; and electric lighting and power services have been extended to serve the residential areas and those areas where various construction works are proceeding, many miles of transmission line having been erected.

Fire services have also been provided for the protection of buildings and depots. The construction of several new bridges, to restore communication broken by floods of unusual magnitude in 1922, has been undertaken. Of these, the largest is one of 300 feet span over the main stream of the Molonglo River.

Power is supplied from a Power House with a capacity of 1,350 kilowatts, which was one of the first structures provided, and the manufacture of bricks, tiles, joinery, cement products, and other requirements, is being actively carried on.

The erection of a hostel for visitors, with immediate accommodation for 100 persons is proceeding on a site adjoining the Governmental Area, and schemes for a provisional Parliament House and Administrative Offices and other buildings in the Governmental Area, as well as hostels for the accommodation of officials and certain public buildings have been prepared and are awaiting Parliamentary sanction.

The provision of cottages in the various residential localities is being proceeded with, and fifty are complete or approaching completion. A contract has been let for a further twenty houses, and an architectural competition is being held for the lay-out and for designs for a large residential area.

A primary school to accommodate 200 children has been erected at Telopœa Park, and many other buildings of a minor character for the accommodation of workmen and for administrative purposes have been provided.

A quarry to supply road-making material has been established; considerable quantities of plant have been purchased for the manufacture of materials, road and sewer construction, transport, etc.; and a light railway has been laid to facilitate the transport of material and plant from stores depot and brickworks to the various localities.

A considerable amount of survey work involved in laying out areas, roads, sites for buildings and various engineering works has been carried out and is still in active progress.

Extensive tree-planting has been undertaken. Belts of trees for shelter and various city parks have been planted, and the formation of avenues and streets and other ornamental features has been carried out, as well as a large amount of afforestation work on the outskirts of the city proper. This department of activity is still proceeding concurrently with the formation of roads and the development of the various areas.

Provision has been made for the constant maintenance of roads, buildings and other services in the Territory.

3. Lands in the Territory.—As a considerable portion of the Commonwealth lands within the Territory is not required in connexion with the establishment of the city, such areas are being made available for leasing under certain conditions. A large number of leases has been disposed of under conditions requiring the extermination of rabbits, noxious animals and weeds. Varying numbers of stock are on agistment on land that may be required for departmental use at a later date. Reference has already been made in Chapter V. to the area of alienated, acquired and leased land within the Territory. All areas are classified into three classes of agricultural and three classes of grazing lands, and about 24,000 acres of these lands are at present leased to returned soldiers for periods varying from five to twenty-five years. The whole of the acquired lands in the Territory are now being classified and the roads regraded in order that leases of a permanent character may be granted.

4. **Lands at Jervis Bay.**—Sovereign rights over a certain area comprising about 28 square miles of land and water at Jervis Bay, to be used as a port in connexion with the Federal Capital, have been granted by the New South Wales Government, and accepted by the Commonwealth. The Royal Australian Naval College has been established in this area on a site known as Captain's Point.

5. **Railways.**—The line from Queanbeyan to Canberra, 4 miles 75 chains long, was opened for goods traffic on 25th May, 1914, and is being worked by the New South Wales Railways Commissioners. This line has been extended on to the Power House and also a further 2½ miles across the Molonglo River to the Civic Centre towards Yass. These extensions are at present only used for Departmental purposes. The total length is approximately 8 miles. At present trains are not run farther than the Power House and do not cross the Molonglo River in consequence of the destruction of the bridge during a heavy flood. A trial survey of the Canberra-Jervis Bay line has been completed, and plans have been prepared sufficiently to enable an approximate estimate of the cost of the line to be arrived at. The permanent survey from Canberra to the boundary of the Federal Territory towards Yass—a distance of 11 miles—has now been effected, and the New South Wales Government has completed the permanent survey from Yass to the Territory boundary—about 32 miles.

6. **Population and Live Stock.**—The estimated population on the 31st December, 1922, was 2,796. The live stock, according to the latest return, comprises:—Horses 1,264; cattle, 9,900; sheep, 208,300.

7. **Educational Facilities.**—Arrangements have been made for the New South Wales Education Department to continue, for the time being, the administration of education in the Territory, the expenditure involved to be refunded annually by the Commonwealth to the State. Including the school at Jervis Bay, there are 15 schools in operation.

8. **Expenditure.**—The capital expenditure on the Seat of Government during the period 1901–11 and in each year thereafter up to the 30th June, 1923, is set out in detail in the appended table:—

FEDERAL CAPITAL TERRITORY.—CAPITAL EXPENDITURE TO 30th JUNE, 1923.

Period.	Expenditure.						Total.
	Choosing Site.	Land Acquisition within Territory.	Land Acquisition outside Territory.	Queanbeyan to Canberra Railway.	Extension of Railway from Power House to Civic Centre.	Construction of Capital.	
	£	£	£	£	£	£	£
1901–11 ..	22,915	..	..	..	..	16,413	39,328
1911–12	68,026	68,026
1912–13	179,525	..	12,575	..	124,718	316,818
1913–14	180,488	..	30,605	..	221,028	432,121
1914–15	36,770	2,850	2,926	..	210,607	253,153
1915–16	127,537	295	995	..	167,384	296,211
1916–17	112,120	8,865	17	15,134	101,533	237,669
1917–18	90,419	285	763	3,497	4,233	99,197
1918–19	1,323	72	241	919	936	3,491
1919–20	11,968	..	20	Cr. 72	3,575	15,491
1920–21	1,816	..	..	4,189	78,489	84,494
1921–22	8,861	..	..	Cr. 20	140,075	148,916
1922–23	1,475	..	200	956	332,694	335,325
Total ..	22,915	752,302	12,367	48,342	24,603	1,469,711	2,330,240

Details of expenditure in connexion with the building of the Federal Capital are given hereunder for the latest three years available :—

FEDERAL CAPITAL.—EXPENDITURE ON CONSTRUCTION, 1921 TO 1923.

Particulars.	1920-21.		1921-22.		1922-23.	
	£	£	£	£	£	£
Buildings—						
Parliament House	8	..
Parliamentary Hostel	215	..	13,620	..
Cottages	9,109	34,741	..	16,488	..
Primary Schools	6,447	..
		9,109		34,956		36,563
Water Supply and Sewerage—						
Water Supply	4,810	..	46,724	..
Sewerage	21,164	..	64,729	..
Intercepting Channels	2,989	..	7,023	..
				28,963		118,476
Roads and Bridges—						
Roads	5,850	21,059	..	75,993	..
Bridges	11	..	4,207	..
		5,850		21,070		80,200
Railways	395	..	837
Electric Light and Power (Power						
House and Mains)	4,354	..	6,205
Tree Planting	1,992	..	2,447	..	4,832
Miscellaneous Minor Works	1,445	..	4,181
Miscellaneous—						
Manufacturing and Trading						
Accounts	9,458	28,338	..	11,259Cr.	..
Suspense Account	14,884	1,543Cr.	..	54,710	..
Plant	36,139	11,644	..	32,099	..
Miscellaneous	1,051	7,514	..	5,850	..
Incidental Works	6	492	..	..	..
		61,538		46,445		81,400
Total ..		78,489		140,075		332,694

9. Revenue.—The revenue of the Federal Territory for the year ended 30th June, 1922, was £34,245.

10. Military College.—In June, 1911, a Military College was opened at Duntroon for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Previous reference has been made to it in Chapter XIV. dealing with Defence.

11. Naval College at Jervis Bay.—See chapter XIV. dealing with Defence.

D. NORFOLK ISLAND.

1. Area, Location, etc.—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude 29° 3' 45" south, longitude 167° 58' 6" east. Its total area is 8,528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles, and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. The climate is equable, the temperature ranging between 56° and 82°

with a mean of 68°. The average annual rainfall is 55 inches. It has been said that the salubrious climate coupled with the beauty of its land and sea scapes should combine to render Norfolk Island "the Madeira of the Pacific."

2. Settlement.—The first colonization, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1806, and thence for 20 years its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers, having become too numerous to subsist on Pitcairn Island, were removed thence to Norfolk Island in 1856. The new community numbered 193—94 males and 99 females—and were the descendants of British sailors and Tahitian women.

In 1856 the island was severed from Tasmania, and created a distinct and separate settlement under the jurisdiction of New South Wales. In 1897 it was made a dependency under the Governor of that Colony, and was administered by the Chief Secretary's Department through a resident Chief Magistrate, in whom was vested the executive government of the settlement, and the penal supervision of its affairs. In 1913, however, a Bill was passed by the Federal Parliament providing for the taking over of the island as a territory of the Commonwealth. The Act came into force on 1st July, 1914, and the island is now administered by the Department of Home and Territories, Melbourne, through an Administrator and Chief Magistrate.

3. Population and Live Stock.—The population on 4th April, 1921, was 339 males, and 378 females, a total of 717. The latest returns of live stock show that there are on the island 1,775 cattle, 634 horses, 296 sheep, and 188 pigs. In addition there are 6,354 head of poultry.

4. Production, Trade, etc.—The soil throughout is rich, and is specially suitable for the cultivation of citrus fruits, bananas, and (in parts) coffee. Various other sub-tropical fruits thrive well. During 1921–22 the production of oranges was 39,095 bushels; bananas, 252,450 dozen; passion fruit, 7,565 bushels; coffee, 27,555 lb.; and pineapples, 597 dozen. There are many thousands of lemon trees and guavas growing wild throughout the island.

Hundreds of whales pass the island throughout the season, but owing to old-fashioned methods very few are captured. The whaling industry, if brought up to date, would be of great importance. The preserved fish industry also offers a great field for commercial energy; such fish as trevalla, kingfish, schnapper, and many others, are plentiful. A company already is in operation, but it has greatly to confine its output, owing to inadequate shipping facilities. In order to improve conditions of marketing, and in other ways to promote the economic interests of the island, a Farmers' Association has been formed. In 1921–22 the imports were valued at £14,312. The exports were valued at £4,305, a large decline from the previous year owing to the diminished export of lemon juice and peel. Small quantities of fruit and fruit pulp, passion fruit juice, seeds, fish, whale oil, wool, and timber were also exported. Nearly all the export trade was with Australia, only small amounts going to New Zealand and the South Sea Islands. The Administrator in his annual report points out the necessity of improved shipping facilities, if Norfolk Island is to progress. At present the island is visited once only every second month, by one of Burns, Philp and Co.'s island steamers. To make matters worse, the cargo space is so limited that cargo is often left behind, while even passengers frequently fail in securing berths to and from the island. The Farmers' Association is now endeavouring to accelerate trade with New Zealand. The "all red" cable from Great Britain via Vancouver, Fanning Island and Fiji bifurcates at Norfolk Island, one line connecting with New Zealand, the other with Brisbane.

5. Social Condition.—Education is free and compulsory up to the age of fifteen years. The school is under the New South Wales Department of Public Instruction, with standards corresponding to the State public schools, but the salaries and allowances of the teachers are paid by the Norfolk Island Administration. The number of scholars enrolled on the 30th June, 1922, was 136.

The Magistrates' Court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

E. NEW GUINEA.

1. THE ISLAND OF NEW GUINEA.

1. Geographical Situation of New Guinea.—New Guinea, frequently described as the largest island in the world, lies to the north of Australia, between $0^{\circ} 25'$ and $10^{\circ} 40'$ S. latitudes, and between $130^{\circ} 50'$ and $150^{\circ} 35'$ E. longitudes. Its estimated area exceeds 300,000 square miles, the greatest length being 1,490 miles, and the greatest breadth 430 miles.

2. Discovery.—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. Colonization.—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonized the eastern. In September, 1914, German New Guinea was seized and occupied by Great Britain by means of a force raised and despatched by the Australian Government.

4. Partition.—The three colonizing powers agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141st degree of longitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half was divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands,) being about 90,000 square miles. An Anglo-German boundary commission appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was $66\frac{1}{2}$ miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable commercial development had taken place, included the northern part of the eastern half of the mainland, known as Kaiser Wilhelm Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is a dependency of the Commonwealth of Australia. The German Pacific protectorate was terminated in 1914.

2. PAPUA.*

§ 1. General Description of Papua.

1. **Australian Dependency of Papua.**—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883, but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east of the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman island. In the year following, an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidized by Queensland, New South Wales, and Victoria, and lasted until 30th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an Executive and a Legislative Council, and advised by a Native Regulation Board. Port Moresby, on the south coast, was made the head-quarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force, under a European officer, was instituted for the maintenance of order. There were also, on the 30th June, 1922, 895 native village constables, as well as native interpreters, warders, boats' crews, etc., employed by the Crown.

2. **Annexation by Commonwealth.**—The Territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution (see p. 35 hereinbefore). The Territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

3. **Physical Characteristics.**—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Strait. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The Territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is estimated at 3,664 miles—1,728 on the mainland, and 1,936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland, and 2,754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a large portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8,000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as of the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

* See also Map on p. 665.

§ 2. Population.

The white population of Papua on 4th April, 1921, was 1,343, made up of 961 males and 382 females. Included in these figures were 79 persons, who were passengers and crew of the s.s. *Marsina*, which was at Samarai at the taking of the Census. The following table gives the white population of Papua for the last five years:—

WHITE POPULATION OF PAPUA, 1918 TO 1922.

YEAR ENDED 30TH JUNE.

1918.	1919.	1920.	1921.(a)	1922.
962	971	1,096	1,343	1,104

(a) The figure for 1921 is the Census return.

The chief occupations of the non-indigenous population at the taking of the Census were:—Government officials and employees, 132; commercial pursuits, 150; shipping, 124; tropical agriculture, 266; missionary work, 144; mining, 159.

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. The official estimate is 250,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 4th April, 1921, 577. These included many mission teachers from Samoa, Fiji, and other Pacific Islands. On the same date, half-castes, with one of the parents a European, totalled 158. An Immigration Restriction Ordinance prohibits the immigration into the Territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

§ 3. Native Labour, Taxation, etc.

1. **Native Labour.**—The rights of both employer and labourer are conserved by the Native Labour Ordinances. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. The labour question is complicated by the communistic system which prevails in the villages. Native custom demands that the friends or fellow-clansmen of the returned labourer receive a share in whatever he gets. The result is that the stimulus of individual interest is largely absent. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after an engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service, and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine-chest, stocked with necessary drugs and first-aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour have made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations. While in some districts the natives manifest a marked unwillingness to work, in other cases, inland villagers have offered themselves as labourers without suggestion from recruiters or other officers. Actual ill-treatment of native employees may be said to be non-existent.

The number engaged under contract of service during the year ended 30th June, 1922, was 4,590, as compared with 7,495 in the preceding year. The decline in labour supply in 1919–20 created considerable anxiety amongst employers, and, while an increase in 1920–21 seemed to indicate that the decline was only temporary, a serious fall again occurred in 1921–22.

2. Native Taxes Ordinance.—Under the Native Taxes Ordinance, passed in 1918, a tax not exceeding £1 may be imposed on natives, excepting native constables, mission teachers, natives unfit for work, and those who have not less than four living children. The proceeds of the tax are to be expended on education, or for such purposes having for their object the direct benefit of the natives as may be prescribed.

The taxes collected in 1921–22 totalled £18,003. The expenditure for the year has again been low because, though the various missions accepted the offer of substantial annual subsidies for additional educational facilities for natives, they had not yet completed the necessary arrangements for commencing work. The principal items of expenditure were:—Native education, £191; native plantations, £722; anthropology, £1,099; bonus paid to mothers at rate of 5s. per annum for four living children under sixteen, with an additional 1s. for each child above four, £902. The credit balance of the Native Taxation Account on 30th June, 1922, was £30,126.

§ 4. Land Tenure.

1. Method of Obtaining Land.—(i) *The Land Laws.* The broad principles upon which the land laws of Papua are based are:—(a) No land can be alienated in fee simple; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

A detailed account of the method of obtaining land was given in Official Year Book No. 6, pp. 1083–4.

(ii) *The Leasehold System.* With a view of attracting pioneer settlers, an ordinance was passed in 1906 under which leases were granted on very liberal terms. No rent was payable for the first ten years, the heavy expense of survey was borne by the Government, and no charge was made for the preparation and registration of the leases, that is to say, no payments whatever had to be made to the Government for 10 years. Under this system, the area under lease increased in four years from 2,089 acres to 363,425 acres; about 140 plantations were started, and nearly 1,000 acres planted during that period.

After allowing free survey for three years, it was decided that all future applicants for agricultural leases exceeding in area 100 acres should be required to pay the cost of survey. It was also found desirable to check a tendency amongst a proportion of land applicants to obtain areas so great that the improvement conditions could not be carried out. It was therefore enacted that no leases should be granted after 1st June, 1910, exceeding 5,000 acres in extent, and that rent at the rate of 3d. per acre must be paid from the commencement of all leases exceeding 1,000 acres in area. As a result of these enactments, several leases have been forfeited. On the other hand, a stricter enforcement of improvement conditions has resulted in a substantial raising of the standard.

2. Holdings.—(i) *General.* On 30th June, 1922, the lands of the Territory were held as follows:—

PAPUA.—HOLDINGS, 1922.

Description.				Area.
				Acres.
Land held by the natives	..			56,938,923
Crown land	..	..		764,411
Freehold land	..	..	..	23,085
Leasehold land	..	..	..	219,181
Area of Territory				57,945,600

Private sales of land in the Territory have now practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans.

(ii) *Leaseholds.* The position as regards leasehold tenures may be seen from the following table:—

PAPUA.—LEASEHOLDS, 1917-18 TO 1921-22.

Year ended 30th June.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Land held under lease . . acres (as recorded)	224,010	218,951	230,002	229,283	219,181

Of the total area of 219,181 acres shown above, agricultural leases accounted for 205,457, and pastoral leases for 11,837 acres.

The area of land acquired by the Crown in 1921-22 was 16,395 acres.

The total area surveyed in the Territory is 23,085 acres of freehold, and 281,468 acres of leasehold.

§ 5. Production.

1. *General.*—The products of the Territory are obtained from its agricultural, forestal fishing, mining, and manufacturing industries. There is a Papuan Court at the Imperial Institute, London, where, beside maps, handbooks and reports, a representative collection of products is shown, additions being made to the exhibits from time to time. Displays of Papuan produce are also made at exhibitions held in Australia. The industries of Papua are not numerous, but they are becoming more diversified. In many cases, some years must elapse before the raw material is available for commerce.

2. *Agriculture.*—(i) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The Territory comprises immense areas of rich alluvial and volcanic soils along the coast, and equally fertile land at elevations up to 6,000 feet. Splendid rainfalls are recorded except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This “dry” area is admirably suited for the production of tobacco, fibres, cotton, etc. There are 16 meteorological stations throughout the Territory. An economic museum and agricultural library have been established.

(ii) *Plantations.* On 31st December, 1921, there were 259 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are spreading in other districts. The area planted was 60,314 acres, or an average of 233 acres for each plantation. The principal plantation industries entered upon up to the present are coconuts, rubber, and sisal hemp. Secondary agricultural industries are the cultivation of bowstring hemp, kapok, coffee, tobacco, vanilla, cocoa, tapioca, cinnamon, tea, rice, and maize. The natives are compelled by an ordinance to plant coconuts for food supply. In the Kokoda district, which is not suitable for coconut planting, 8,000 rubber seeds and plants were distributed amongst the native villages in 1918. In addition to the coconuts in these plantations many more are planted over small and

widely scattered areas by the older natives in accordance with custom. The following table shows the areas under the different cultures at the end of December, 1921 :—

PAPUA.—AREA OF PLANTATIONS, 1921.

Description.						Area.
						Acres.
Coconuts	..	..	..	..	..	46,515
Rubber	..	..	..	..	..	7,465
Hemp	..	..	..	..	..	5,822
Coffee	..	..	..	..	..	11
Rice	..	..	..	..	..	32
Other cultures (including fruit trees)	..	..	..	..	..	469
Total						60,314

The quantity and value of the various products for the year ended 30th June, 1922, were as follows :—

PAPUA.—PRODUCTION FROM PLANTATIONS, 1921–22.

Product.				Quantity.	Value.
				Tons.	£
Copra	..	..	..	5,063	87,377
Hemp	..	..	..	145	4,630
Rubber	..	..	..	85	5,826
Total				..	97,833

It was estimated in 1917 that over £1,000,000 had been expended in plantations, and, with the exception of two large British companies, practically the whole of the capital was subscribed in Australia and locally.

(iii) *Government Plantations and Experimental Stations.* At Orangerie Bay the Government coconut plantation covers an area of 1,100 acres, some of the trees being in bearing. Copra-making has been commenced, the production in 1922 being nearly 170 tons, realizing £3,046. The Government rubber plantation on the Kemp-Welch River has an area of 230 acres, and contains over 4,000 trees large enough for tapping, but no action has, as yet, been taken in this direction owing to the low price of rubber.

(iv) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber—both vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables. About 92,000 acres are held under timber licences, but little development has so far been undertaken. There are large areas of valuable timbers, but some of them are situated in mountainous country difficult of access.

3. *Live Stock.*—On 31st December, 1921, the live stock in the Territory consisted of 368 horses, 2,344 head of cattle, 123 mules, 3 donkeys, 1,407 goats, and 557 pigs. A Government stud-farm has been established for the breeding of horses. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. *Forest Products.*—There is a large diversity of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway wagons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter boxes; 5 for boat building; 4 for piles,

and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*); but the planters generally prefer the imported Para rubber. Guttapercha is obtained from a species of *pakuikum*, which grows on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. The mountain firs offer possibilities in the shape of turpentine oils and timbers, while the conifer *Agathis alba* yields a valuable resin. Saw-mills have been established, but the output has not been sufficient to supply the local demand for building and other timber. The Papua Co. Ltd. operates at Manu Manu and supplies timber to various parts of the Territory.

5. Fisheries.—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the Territory. Bêche-de-mer and trochus are found along the shores and reefs. There is a dugong fishery on the coast of the Western Division. The value of fisheries exports in 1921–22 was £24,338, of which bêche-de-mer accounted for £15,045, pearls £5,250, trochus shell and pearl shell £4,043.

6. Mining.—(i) *Variety of Minerals*. Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, chromite, brown coal, lignite, and petroleum. Indications of the existence of petroleum have been found at scattered intervals over an area of country covering about 1,500 square miles between Yule Island and the Purari Delta, in the Gulf Division of Papua. Quantities of oil and inflammable gas have been met with in the test bores put down, but not in sufficient bulk as yet for commercial purposes. Indications have also been noted in Dutch New Guinea, and in the portion of the Territory formerly under German control. According to one observer, the whole of the East Indian Archipelago forms one “petroliferous province,” the statement being supported by the fact that the nature of the oil so far obtained in Papua is more comparable with Dutch East Indian oil than with any other.

Exploitation of the Papuan oil-fields by private companies is not permitted.

Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist. A geologist was added to the Government service at the beginning of the year 1911.

(ii) *Gold*. In 1888 the first gold was discovered. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. Prospecting parties are subsidized by the Government. There are 72 white miners and 662 indentured and casual labourers, of whom 63 whites and 512 indentured labourers were working on the Louisiade field. This field was the chief producer in 1921–22. The Yodda field returned 360 ozs., and the Gira 100 ozs. The total quantity, in fine ounces, and the value as returned of the gold yield for five years are given below:—

PAPUA.—GOLD YIELD, 1917–18 TO 1921–22.

1917–18.		1918–19.		1919–20.		1920–21.		1921–22.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
fine ozs. 6,732	£ 28,594	fine ozs. 5,303	£ 27,084	fine ozs. 3,866	£ 21,747	fine ozs. 2,047	£ 11,159	fine ozs. (a)	£ 60,091

(a) Not available.

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained. The total value of gold won to 30th June, 1922, was £1,633,240.

(iii) *Copper*. The export of copper ore in 1921–22 amounted to 2,700 tons, valued at £13,514. There has been very little activity in actual mining during the year. Preparations for extensive mining were made at the Astrolabe field, but these have slackened considerably. The total amount shipped to the end of June, 1922, was 12,132 tons, valued at £164,328.

(iv) *Osmiridium*. During 1921–22 it is estimated that about 100 ozs. of this metal were obtained, chiefly on the Gira goldfield. The existence of osmiridium had been known for some years, but no serious attempt was made to collect it, the alluvial gold miner even picking out the larger slugs of the metal from his gold parcel and throwing them away.

(v) *Other Minerals*. Some good samples of galena (sulphide of lead) have been obtained. Cinnabar (sulphide of mercury), graphite (or plumbago), zinc-blende, native sulphur, and other minerals are known to exist.

A mineral laboratory and museum have been fitted up, and are available to prospectors and others interested.

7. *Water Power*.—Most of the rivers in Papua carry a large volume of water from a great height over a relatively short distance, and in consequence the Territory is admirably situated for the introduction of hydro-electric schemes. It is estimated that there are at least 10,000,000 h.p. available for this purpose.

§ 6. Finance, Trade, Postal and Shipping.

1. *Finance*.—The revenue and expenditure for 1921–22, under principal heads, are given below ; also a summary covering a period of five years. In addition to the revenue collected during the year, amounting to £73,288, a sum of £50,000 was granted by the Commonwealth Government.

PAPUA.—REVENUE AND EXPENDITURE, 1921–22.

REVENUE.			£	EXPENDITURE.			£
Customs and Excise ..	..	..	44,019	Lieutenant-Governor and Civil list ..	..	..	4,272
Post Office ..	..	..	3,530	Government Secretary ..	..	..	47,496
Licences ..	..	..	1,062	Treasury ..	..	..	36,660
Fees, Fines, etc. ..	..	..	5,493	Lands, Mines, and Agriculture ..	..	..	9,241
Mining receipts ..	..	..	961	Public Works ..	..	..	9,255
Land revenue ..	..	..	4,704	Medical ..	..	..	13,672
Harbour dues ..	..	..	1,346	Native Affairs ..	..	..	2,453
Miscellaneous receipts ..	..	..	4,985	Central Court ..	..	..	1,753
Stamp duties ..	..	..	208	Legislative Council ..	..	..	110
Appropriation of former years, etc.	..	..	6,980				
Total ..	..	..	£73,288	Total ..	..	..	124,912

Returns of revenue and expenditure for the last five years are given hereunder :—

PAPUA.—REVENUE AND EXPENDITURE, 1917–18 TO 1921–22.

Item.		1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
		£	£	£	£	£
Revenue ..	..	72,594	73,121	85,537	98,175	73,288
Expenditure ..	..	103,176	102,962	118,436	146,827	124,912

The loans due to the Commonwealth by the Territory of Papua amount to £94,601

2. **Trade.**—The value of imports and exports for the last five years is shown in the table below :—

PAPUA.—VALUE OF IMPORTS AND EXPORTS, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Imports	285,792	258,112	422,741	484,770	305,705
Exports	220,599	176,247	270,481	172,672	220,236
Total Trade ..	506,391	434,359	693,222	657,442	525,941

As in all new countries, the imports consist chiefly of articles necessary for the primal needs of the community. Thus in 1921-22 the imports of agricultural products and groceries came to £84,000; drapery, £27,000; metals and machinery, £26,000; tobacco, £27,000; oils, paints, etc., £12,000; beverages, £11,000; wood, wicker, and cane, £4,000; drugs, £7,000. Government stores to the value of £83,000 were also imported. The chief items of export during the last five years are as follows :—

PAPUA.—PRINCIPAL EXPORTS, 1917-18 TO 1921-22.

Article.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Gold	32,931	27,084	21,757	11,159	68,726
Copra	68,225	53,264	124,035	68,578	87,377
Rubber	37,020	33,010	41,542	28,966	5,826
Hemp	17,682	12,532	12,284	7,723	4,630
Copper Ore	11,572	1,613	..	1,830	13,514
Pearl Shell and Trochus Shell ..	6,625	9,375	24,255	4,464	4,043
Pearls	19,250	21,550	25,577	14,950	5,250
Bêche-de-Mer	3,551	2,240	612	7,922	15,045
Bark	7,228	4,847	2,686	1,408	752

Rubber has been so low in price that it has proved unprofitable, and some planters have decided to cease tapping. Sisal hemp also cannot be profitably grown at the present price for that product.

3. **Postal.**—(i) *Posts.* No great development in means of communication has taken place during latter years. Postal returns for the last five years are given hereunder :—

PAPUA.—POSTAL STATISTICS, 1917-18 TO 1921-22.

Year.	Letters.		Packets.		Newspapers.		Parcels.	
	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.
1917-18 ..	137,850	124,656	20,214	5,850	91,866	45,738	3,606	882
1918-19 ..	159,702	114,540	10,272	5,832	125,118	42,354	4,266	1,008
1919-20 ..	174,138	135,234	15,072	8,214	141,906	46,686	5,208	1,182
1920-21 ..	116,208	144,930	9,876	6,510	72,168	45,402	3,072	1,362
1921-22 ..	124,646	156,054	11,554	8,172	100,038	51,846	4,824	2,260

(ii) *Money Orders.* The value of money orders issued in 1917-18 was £5,986; of those paid, £1,310. In 1921-22, the respective values were £7,601 and £1,527.

4. **Shipping.**—The following table shows the number, tonnage, and nationality of oversea vessels entered and cleared at ports during the years 1917-18 to 1921-22 :—

PAPUA.—OVERSEA SHIPPING, 1917-18 TO 1921-22.

Nationality.	Vessels.									
	Number.					Tonnage.				
	1917-18	1918-19	1919-20	1920-21	1921-22	1917-18	1918-19	1919-20	1920-21	1921-22
British	117	98	86	108	127	57,955	60,108	59,189	67,624	74,206
Foreign	20	..	..	..	..	63,772	..	..	..	..
Total	137	98	86	108	127	121,727	60,108	59,189	67,624	74,206

Throughout, the figures are exclusive of ships of war and Government vessels.

§ 7. Progress of Papua.

1. **Statistical View of Fourteen Years' Progress.**—As already stated (§ 2, *supra*) the Territory was placed under the Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date :—

PAPUA.—STATISTICAL SUMMARY, 1907 TO 1922.

Items.	Year ended 30th June.	
	1907.	1922.
White population	690	1,104
Native labourers employed (exclusive of Crown servants) ..	2,000	(a)
Number of white civil servants	65	(a)
Armed constabulary	185	(a)
Village constables	401	895
Territorial revenue	£ 21,813	73,288
Territorial expenditure	£ 45,335	124,912
Value of imports	£ 87,776	305,705
Value of exports	£ 63,756	220,236
Area under lease	acres 70,512	219,181
Area of plantations	acres 1,467	60,314
Meteorological stations established	3	16
Gold yield	fine ounces 12,439	(a)
Copper ore shipped	tons 137	2,700
Live stock in Territory—		
Horses	173	368
Cattle	648	2,344
Mules	40	123

(a) Not available.

3. THE TERRITORY OF NEW GUINEA.

§ 1. General Description.*

1. **Area and Geographical Position.**—The present Territory of New Guinea comprises that portion of the German New Guinea Protectorate which lay south of the equator (excepting only the island of Nauru, see F hereinafter), and which was known in German

* See also Map on page 665.

times as the "Old Protectorate." The principal islands (with their German names if these differ from those now in use) and their approximate areas are as follows:—

AREA OF TERRITORY OF NEW GUINEA.

Particulars.						Approximate Area.
						Square miles.
North-East New Guinea (Kaiser Wilhelm Land)						70,000
Bismarck Archipelago—						
New Britain (Neu Pommern)						13,000
New Ireland (Neu Mecklenburg)						3,000
Lavongai (New Hanover or Neu Hannover)						600
Admiralty Islands and North Western Islands						1,000
Solomon Islands—						
Bougainville						3,200
Buka						200
Total						91,000

The most northerly of the islands (Sae) lies in about lat. 1° S ; the most southerly point of the Territory (the eastern part of its boundary with Papua) is in lat. 8° S. ; its western boundary (with Dutch New Guinea) is the meridian of 141° E. ; and its most easterly island (Nukumanu) lies in longitude 159° E. From north to south its greatest extent is nearly 500 miles ; from east to west over 1,000 miles. Rabaul, the capital, occupies a central position : its distances from some of the principal outstations are— from Madang, 415 miles ; Aitape, 610 miles ; Kieta, 270 miles.

2. **North-East New Guinea.**—(i) *General.* North-East New Guinea (Kaiser Wilhelm Land) is the north-eastern part of the island of New Guinea. Its interior is rugged and mountainous, with heights reaching to over 13,000 feet, and not less than 15,000 square miles is still unexplored. The mountain ranges approach the coast, leaving comparatively little flat land near sea level, but this narrow strip is very fertile. All trade and communications are by sea along the coast, and the interior is left almost wholly to the native population.

(ii) *Coast-line.* The coast-line, which is over 900 miles long, is in parts fringed with coral reefs, and there are many small, lofty islands along its course. Except for Huon Gulf in the little-developed east of the country there are no deep inlets. Langemak Bay has commodious anchorage in deep water, and Finsch Harbour has landlocked anchorage for small vessels. In Astrolabe Bay are two or three sheltered harbours, including Melanua, Madang (Friedrich Wilhelm Harbour) and Sek, which are the best on the coast. There are many other anchorages fit for schooners and small steamers in certain winds.

(iii) *Rivers.* There are many rivers, of which the most important are the Sepik (Kaiserin Augusta) and the Ramu (Ottilien). The Sepik rises near the junction of the boundaries of Dutch New Guinea and Papua, and flowing easterly reaches the coast in latitude 4° S. It is navigable for 60 nautical miles by large ocean steamers, and for 300 nautical miles by steamers drawing from 10 to 13 feet. In 1914 a vessel of 50 tons ascended the river for 450 miles ; it was then in flood and 7 fathoms deep at this distance, while at low water the depth was said to be 4 fathoms.

The Ramu rises in about 6° S. latitude and, flowing northwards, enters the sea near the mouth of the Sepik. It has been navigated, though with great difficulty, by flat-bottomed steamers for nearly 200 miles from its mouth.

3. **Bismarck Archipelago and Solomon Islands.**—(i) *General.* The islands of the Bismarck Archipelago and the Solomons are generally mountainous, with level ground near the coasts alone. The only low-lying islands are some in the Duke of York and Admiralty Group. The islands of Bougainville and Buka (Solomons) are equally rugged ;

Bougainville contains mountains reaching 10,000 feet. The soil is usually fertile, except on the low coral islands, where fresh water is scarce.

(ii) *Coast Line.* The coasts of the large islands generally rise fairly steeply from the water, with bold headlands; but as a rule there is a beach, often overgrown with mangroves. Sunken rocks and coral reefs fringe many of the coasts, especially of the low islands. There are many good harbours, the chief being Blanche Bay, in New Britain, containing the good anchorages of Matupi Harbour and Simpson Harbour; Kavieng Harbour in New Ireland; Mioko in the Duke of York Islands; Peter Harbour in the Vitu Islands; Nares Harbour in Manus Island; and Queen Carola Harbour in Buka Island.

(iii) *Rivers.* Most of the streams in these islands are too shallow and too rapid for navigation.

4. **Revision of Geographical Names.**—A revision of geographical names, based on a list of names prepared by the Permanent Committee on Geographical Names for British Official Use, is in progress. A provisional list of names in the Territory is published in the Report for 1921–22. Among the changes already made are the use of North-East New Guinea for Kaiser Wilhelm Land, and Lavongai for New Hanover.

5. **Maps.**—A geological map, and maps showing the areas in which the native population has been counted or estimated, the areas of land alienated in freehold or leasehold, roads and Government stations, are published in the Report for 1921–22. Admiralty Chart No. 2766 (North-East Coast of New Guinea, with Bougainville, New Britain, New Ireland, Admiralty Islands and adjoining reefs) is a useful general map of the Territory.

§ 2. Climate and Health.

1. **General.**—The Territory has a moist tropical climate, with small differences between daily and seasonal extremes of temperature. There is no cool season, rain falls in all months, and the humidity is high. The Territory is outside the area of typhoons, but strong winds are not uncommon, and damage is occasionally done to plantations.

2. **Temperature.**—The mean annual temperature on the coast is about 26° to 27.5° C. (79° to 81° F.)—a moderate temperature for the latitude—and the difference between the means of the coldest and warmest months is not more than 2° F.

3. **Rainfall.**—There is no dry season. At Rabaul the period of the north-west monsoon, November to April, is wetter than that of the south-east trade from May to September or October; but in some other places, especially the south coast of New Britain and in the vicinity of Finsch Harbour, the south-east trade brings the principal rains. The position of the coasts in regard to the direction of the prevailing winds is the decisive factor for the annual rain period. The annual rainfall amounts, at nearly all the stations at which observations have been made, to over 80 inches. In Bougainville, southern New Britain, and the island of New Guinea, the yearly average is from 100 to over 250 inches; but amounts as low as 66 inches have been reported from some stations on the coast of the island of New Guinea. The average rainfall at stations in the Gazelle Peninsula is about 95 inches. A region of high rainfall, reaching over 250 inches, is in the vicinity of Finsch Harbour. There are large variations in the rainfall from year to year, and some districts of the Territory are subject to unusually dry periods. Thus in 1894 Kokopo (on Blanche Bay, north-east of New Britain) had only 65.6 inches, while in 1891 there were 133.3 inches; the average over a period of years was 74.4 inches. There is reason to believe that a severe drought which prevailed in New Ireland in the years 1914 and 1915 was in part responsible for the large decrease in the population of that island which took place during the period of the military occupation.

4. **Humidity.**—The humidity is very high. Observations taken at Rabaul during the years 1916 to 1921 showed an average humidity of 75 per cent., and the variation in the monthly means was only from 69 per cent. (October) to 80 per cent. (April). At Madang, during the same period, the yearly average was 80 per cent., the lowest monthly mean 77 per cent. (August), the highest 83 per cent. (April). During the same period at Kieta (Bougainville) the mean was 78 per cent., the minimum 74 per cent. (August and October), and the maximum 80 per cent. (June).

5. Influence on Health.—The climate in North East New Guinea and at many places in the Bismarck Archipelago and the Solomon Islands is enervating for Europeans. At some places, however, and notably at Rabaul, the heat and humidity are tempered by the constant breezes, and it is possible for Europeans, with careful attention to diet and exercise, and precautions against diseases, to maintain good health. When the measures taken against malaria and other diseases have produced their full effect, and use has been made of places in the mountains suitable for healthy sanatoria, it may be hoped that a satisfactory average of health will be maintained.

§ 3. Government.

1. The Military Occupation.—On the 17th September, 1914, the Acting Governor of German New Guinea signed terms of capitulation with the officer commanding a Naval and Military Expedition sent from Australia, and thereafter the Territory was under military administration until the establishment of Civil Government in May, 1921.

2. Mandate.—In 1919 it was decided by the principal Allied and Associated Powers that the Territory of New Guinea, which Germany gave up as one of the terms of peace, should be entrusted under Mandate from the League of Nations to the Government of the Commonwealth. The issuing of the Mandate was, however, delayed; and it was not until 17th December, 1920, that its terms were settled, and the Mandate itself did not reach Australia until April, 1921.

The terms of the Mandate are given hereunder:—

THE COUNCIL OF THE LEAGUE OF NATIONS:—

Whereas by Article 119 of the Treaty of Peace with Germany signed at Versailles on June 28th, 1919, Germany renounced in favour of the Principal Allied and Associated Powers all her rights over her oversea possessions, including therein German New Guinea and the groups of islands in the Pacific Ocean lying south of the Equator other than German Samoa and Nauru; and

Whereas the Principal Allied and Associated Powers agreed that in accordance with Article 22, Part I. (Covenant of the League of Nations), of the said Treaty, a Mandate should be conferred upon His Britannic Majesty to be exercised on his behalf by the Government of the Commonwealth of Australia to administer New Guinea and the said islands, and have proposed that the Mandate should be formulated in the following terms; and

Whereas His Britannic Majesty, for and on behalf of the Government of the Commonwealth of Australia, has agreed to accept the Mandate in respect of the said territory and has undertaken to exercise it on behalf of the League of Nations in accordance with the following provisions; and

Whereas, by the afore-mentioned Article 22, paragraph 8, it is provided that the degree of authority, control or administration to be exercised by the Mandatory not having been previously agreed upon by the Members of the League, shall be explicitly defined by the Council of the League of Nations,

Confirming the said Mandate, defines its terms as follows:—

ARTICLE 1.

The territory over which a mandate is conferred upon His Britannic Majesty for and on behalf of the Government of the Commonwealth of Australia (hereinafter called the Mandatory) comprises the former German Colony of New Guinea and the former German islands situated in the Pacific Ocean and lying south of the Equator, other than the islands of the Samoan group and the island of Nauru.

ARTICLE 2.

The Mandatory shall have full power of administration and legislation over the territory subject to the present mandate as an integral portion of the Commonwealth of Australia, and may apply the laws of the Commonwealth of Australia to the territory, subject to such local modifications as circumstances may require.

The Mandatory shall promote to the utmost the material and moral well-being and the social progress of the inhabitants of the territory subject to the present mandate.

ARTICLE 3.

The Mandatory shall see that the slave trade is prohibited, and that no forced labour is permitted, except for essential public works and services, and then only for adequate remuneration.

The Mandatory shall also see that the traffic in arms and ammunition is controlled in accordance with principles analogous to those laid down in the Convention relating to the control of the arms traffic, signed on September 10th, 1919, or in any convention amending the same.

The supply of intoxicating spirits and beverages to the natives shall be prohibited.

ARTICLE 4.

The military training of the natives, otherwise than for purposes of internal police and the local defence of the territory, shall be prohibited. Furthermore, no military or naval bases shall be established or fortifications erected in the territory.

ARTICLE 5.

Subject to the provisions of any local law for the maintenance of public order and public morals, the Mandatory shall ensure in the territory freedom of conscience and the free exercise of all forms of worship, and shall allow all missionaries, nationals of any State Member of the League of Nations, to enter into, travel and reside in the territory for the purpose of prosecuting their calling.

ARTICLE 6.

The Mandatory shall make to the Council of the League of Nations an annual report to the satisfaction of the Council, containing full information with regard to the territory, and indicating the measures taken to carry out the obligations assumed under Articles 2, 3, 4, and 5.

ARTICLE 7.

The consent of the Council of the League of Nations is required for any modification of the terms of the present Mandate.

The Mandatory agrees that if any dispute whatever should arise between the Mandatory and another Member of the League of Nations relating to the interpretation or the application of the provisions of the Mandate, such dispute, if it cannot be settled by negotiation, shall be submitted to the Permanent Court of International Justice provided for by Article 14 of the Covenant of the League of Nations.

The present Declaration shall be deposited in the archives of the League of Nations. Certified copies shall be forwarded by the Secretary-General of the League of Nations to all Powers Signatories of the Treaty of Peace with Germany.

Made at Geneva the 17th day of December, 1920.

3. New Guinea Act.—In anticipation of the issuing of the Mandate, the Commonwealth Parliament had already, in September, 1920, passed the New Guinea Act 1920, by which the Governor-General was authorized to accept the Mandate when issued. The Territory was, by the Act, declared to be a Territory under the authority of the Commonwealth, by the name of the Territory of New Guinea.

The Act provided that there should be an Administrator, who should be charged with the administration of the Territory. The power to legislate for the Territory was to be exercised by the Governor-General; and no Council—legislative, executive, or advisory—was provided for.

The Act also provided for the observance of the safeguards in the interests of the natives set out in the Mandate, and by it forced labour was absolutely forbidden.

4. Expropriation.—The Treaty of Peace provided that German nationals resident in her former colonies might be repatriated; and that the property rights and interests of German nationals in former colonies might be retained and liquidated by the Allies, the proceeds being credited to Germany in part payment of the reparation payable by her under the Treaty.

In pursuance of these powers, in September, 1920, the property of the principal German companies in the Territory, and in March, 1921, that of a large number of German planters, was vested in the Public Trustee; and the management of their businesses and plantations was entrusted (pending the sale or other disposal of the properties) to the Expropriation Board. The total value of the properties expropriated was estimated in 1920 at about £4,000,000; owing to the decline in the price of copra, the present value is probably much less. The sum realized on the disposal of the properties will be treated as part payment of the moneys due by Germany to the Allied Governments for reparation and will be apportioned according to the Agreements relating to reparation. Less than 50 of the German subjects who were in business or engaged in planting now remain in the Territory.

5. Establishment of Civil Government.—On receipt of the Mandate, arrangements were made by the Prime Minister, under whose control the administration of the Territory was placed,* for the establishment of Civil Government, and on the 9th May, 1921, a proclamation was issued in Rabaul that the military occupation had that day terminated. On the same day the first Ordinances made by the Governor-General under the New Guinea Act 1920 came into force. The most important of these was the *Laws Repeal and Adopting Ordinance* 1921, which provided that German laws should cease to apply to the Territory, and substituted other statute laws (see 7. Statute Law, below), together with the principles and rules of common law and equity in force in England, as the basis of the law of the Territory, subject to modification by Ordinance made by the Governor-General.

The Ordinance also preserved the rights of natives in land, and the existing rights, privileges and customs of the natives in regard to cultivation, barter, hunting, and fishing; and it provided that tribal institutions, customs, and usages should continue, so far as they were not repugnant to the general principles of humanity.

Other Ordinances which came into force on the same day provided for the establishment of courts of law, and for the prohibition of the supply to natives of firearms, ammunition, intoxicating liquor, and opium.

6. Departments and Districts.—The Administration is organized in seven Departments—Government Secretary; Treasury; Native Affairs; Public Health; Customs and Shipping; Lands, Mines, Surveys, and Forestry; and Agriculture.

For administrative purposes, the Territory is divided into ten Districts, named after the principal stations in them, as follows:—In New Britain—Rabaul, Talasea, and Gasmata; on the Mainland—Morobe, Madang, and Aitape; in New Ireland and Lavongai (New Hanover)—Kavieng and Namatanai; in Admiralty Islands and adjoining islands—Manus; in Solomon Islands—Kieta. Each District is under a District Officer, assisted by a small staff.

There are about 210 persons in the service of the Administration, and their salaries aggregate about £93,000 per annum. There is as yet no system of training for the service; applicants are chosen from persons who apply on advertisement, and in practice only returned soldiers are selected, except for special posts. Besides those in the service of the Administration, about 320 persons are employed by the Expropriation Board (see § 5.)

7. Statute Law.—The Acts of the Commonwealth Parliament do not (unless expressly so stated) extend to the Territory. The *Laws Repeal and Adopting Ordinance* 1921 provided that certain Acts and Ordinances should be applied to the Territory. The state of the statute law in force in the Territory on 30th June, 1923, may be summarized as follows:—

(a) Eleven Acts of the Commonwealth Parliament (the New Guinea Act, the Acts to enforce the Treaties of Peace, the Air Navigation Act, the Patents and Trade Marks Acts, the Service and Execution of Process Act, and other Acts) extend to the Territory of their own force. Portion of the Navigation Act also extends to the Territory, but no provision has been made for its enforcement.

* Control of the administration was transferred in July, 1923, to the Department of Home and Territories.

(b) Twenty-six Acts of the Commonwealth Parliament apply to the Territory by virtue of Ordinances made by the Governor-General.

(c) Four Acts of the Queensland Parliament, as well as the Acts and Statutes of England in force in Queensland on 9th May, 1921, apply to the Territory by virtue of Ordinances made by the Governor-General.

(d) Nineteen Ordinances of the Territory of Papua apply to the Territory by virtue of Ordinances made by the Governor-General.

(e) Fifty-five Ordinances, Orders, and Proclamations of the Military Administration remain in force.

(f) Ordinances have been made by the Governor-General under the New Guinea Act 1920, subsequently to the establishment of civil government.

The Acts of the Commonwealth and Queensland Parliaments, the Ordinances of Papua and of the Territory, and the regulations under them, in force on 31st December, 1922, have been published as Vols. I.—III. of Laws of the Territory of New Guinea.

8. **Economic Equality in the Territory.**—The Mandate does not require, as do the Mandates for the former Turkish and for the Central African possessions, that the Government shall provide equal opportunities for the trade and commerce of other countries. Nevertheless, nationals of foreign powers enjoy substantially the same privileges and opportunities as British subjects. In the laws applying to residents of the Territory, there is no distinction between British subjects and foreigners, except that foreigners cannot be appointed to the public service, are subject to the Aliens Registration Act, and cannot purchase properties which are sold under the provisions of the Treaties of Peace, while foreign companies cannot hold land in the Territory. In oversea trade, the tariff applies equally to all countries, and shipping is subject to the same conditions whatever the country of registration. Trade between the Territory and Australia is open to foreign ships on compliance with the coastal trade provisions of the Navigation Act, and there is no discrimination against foreign ships in regard to trade within the Territory.

9. **Reports to the League of Nations.**—Two Reports have been rendered to the League of Nations in compliance with Article 6 of the Mandate. The first was for the period from 1914 to the 30th June, 1921 (Parliamentary Paper No. 3 of 1922), and the second for the year 1921–22 (Parliamentary Paper No. 18 of 1923).

§ 4. Population.

1. **White Population.**—The increase in the white population at various intervals since 1885 is shown in the appended tabulation. On 4th April, 1921, it was 1,288, of whom about 250 were missionaries, and 262 were troops engaged in administration; 715 were British subjects, and nearly all the remainder were nationals of former enemy countries. At the present time the number of persons employed by the Administration and the Expropriation Board is about 500, and the number of ex enemy subjects in the Territory is about 280, of whom about 230 are missionaries.

TERRITORY OF NEW GUINEA.—WHITE POPULATION, 1885 TO 1921.

Year.						Number.
1885	..	..	..	..	..	64
1895	..	..	..	..	..	203
1910	..	..	..	..	..	687
1914	..	..	..	..	..	1,027
1917	..	..	..	..	..	818 (a)
1921	..	..	..	..	..	1,288 (b)

(a) Does not include troops. (b) Including 262 troops (engaged in Administration at date of Census, 4th April, 1921).

2. **Asiatic Population.**—Malays seem to have been the first Asiatics brought by the Germans to German New Guinea; 37 of them are recorded on the mainland in 1885. About 1889 the New Guinea Company began to bring Chinese, Malays, and

Javanese in growing numbers from Singapore and Java to work on its plantations; by 1892 there were about 1,800 on the mainland. By 1898 the number had decreased to 300 or 400.

About ten years later, Chinese from China were brought to the Protectorate; in 1911 there were 555, in 1914, 1,377, in 1921, 1,424, and in June, 1922, about 1,400. The number of Malays and Javanese in 1914 was 163, and in 1921, 221.

In 1895 there were 2 Japanese in the Protectorate, in 1911 there were 25, in 1914, 103, in 1921, 87, and in June, 1922, about 74 residents. The total Asiatic population was 1,681 in 1914, and 1,778 in 1921. There were also, in 1921, 28 Polynesians and 69 half-castes.

The number of Asiatics has largely decreased. In 1921-22 the births of Chinese exceeded the deaths by 34, but departures exceeded arrivals by 57, so that the population decreased by 23. The number of Japanese decreased by 13.

Under the German administration, Chinese, Malays, and other Asiatic labourers had a status somewhat superior to that of the natives. Japanese, although they had no rights under Treaty (for the German-Japanese Treaty of Commerce and Navigation of 1911 did not apply to German New Guinea, as it was only a "Schutzgebiet"), had a status equal in many respects to that of Europeans. They could not, however, acquire land in freehold; but both they and Chinese (if able to read and write a European language) could obtain leases up to 30 years. Ordinances provided safeguards in the interests of Chinese and other non-indigenous natives brought to the Protectorate, and the German Government welcomed Chinese labourers, whose numbers were increasing rapidly before the war. The Government did not look so kindly on the immigration of large numbers of Japanese or on their acquisition of important interests in the Protectorate, but no obstacle seems to have been placed in the way of their entering the Protectorate.

The Chinese provide the skilled artisans and domestic servants of the Territory, and many of them are small traders. There is only one Japanese firm of any size, but it is not a serious competitor with European firms; most of the Japanese residents are employed in the plantations, shipyards, and stores.

The Immigration Act 1901-1920 of the Commonwealth is in force in New Guinea.

3. Native Population.—As a large part of the Territory is not under Government influence, and as even in the districts under Government influence it is difficult to make a complete count of the natives, it has not been possible to attempt any reliable estimate of the population. The results of partial counts made by the German Government in 1914, and by the Commonwealth Government in 1921, are shown in the table below. In 1914 there were counted 152,075 natives; in 1920, 187,517; the area covered in each case being less than one-quarter of the Territory. In 1921, 118,326 were counted in the Bismarck Archipelago and an estimate made of 13,000 others—a total of 131,326; in the Solomon Islands 26,823 were counted, and 20,000 others estimated—a total of 46,823. The total population, apart from North-East New Guinea, was, therefore, estimated at about 180,000. In North-East New Guinea 42,368 were counted in a narrow strip along the coast. There is no reliable means of estimating the population in the interior. The area of North-East New Guinea is about three-quarters of that of Papua, the population of which has been estimated at about 275,000. Such information as can be gathered from reports of the few explorers of the interior raises a doubt whether the population is as dense as in Papua; and, considered as a source of labourers, it must be remembered that the population of the mountainous parts of the interior will probably not be suitable for work on coastal plantations.*

The population is known to have declined very seriously in New Ireland and in other parts of the Territory since the white man came to the islands. In other parts it is stationary; and there are occasional reports of slight increases. The causes are in part endemic diseases, in part diseases due to the white man, in part (according to some of the German reports) the influence of recruiting both on the social life of the villages and in encouraging the habit already prevalent among native women of refusing to bear children, and in part perhaps what has been described in Papua as the "feeling of rather hopeless uncertainty" produced in the native by the impact of white civilization.

* In the last annual report, published by the German Government, the population of the Territory was estimated at 600,000. It cannot be said that the Australian Administration is yet in possession of information to confirm the estimate.

TERRITORY OF NEW GUINEA.—NATIVE POPULATION 1914 AND 1921.

Islands.	1914.			1921.(a)		
	Counted.	Estimated, not Counted.	Total.	Counted.	Estimated, not Counted.(b)	Total.
Bismarck Archipelago—						
New Britain, Duke of York, and Vitu Islands—						
Gazelle Peninsula and ad- jacent islands ..	27,853	15,000	85,626	64,619	..	64,619
Remainder of New Britain ..	15,073	27,700				
Duke of York Group ..	3,049	..	3,049	2,685	..	2,685
Vitu Islands ..	2,523	..	2,523	(d)	..	(d)
Total New Britain, etc. ..	48,498	42,700	91,198	67,304	13,000(b)	80,304
New Ireland and Lavongai (New Hanover)—						
New Ireland (District of Namatanai) ..	11,739	2,500	28,988	8,215	..	8,215
New Ireland (District of Kavieng) ..	14,749	..				
Islands between New Ireland and Lavongai ..	811	..	811	682	..	682
Lavongai ..	6,539	..	6,539	6,876	..	6,876
Mussau, Emirau and Tench Islands ..	2,160	800	2,960	2,170(e)	..	2,170(e)
Tabar and Simberi Islands ..	3,483	..	3,483	2,769	..	2,769
Lihir Islands ..	2,818	..	5,692	2,875	..	2,875
Tanga Islands ..	1,241	1,000				
Anir Islands ..	633	..	..	704	..	704
Total New Ireland and Lavongai, etc. ..	44,173	4,300	48,473	38,620	..	38,620
Admiralty and North Western Islands—						
Admiralty Islands ..	4,736	7,500	12,236	11,622	..	11,622
North Western Islands ..	992	..	992	780	..	780
Total Admiralty and North Western Islands ..	5,728	7,500	13,228	12,402	..	12,402
Total Bismarck Archipelago	98,399	54,500	152,899	118,326	13,000(b)	131,326
Solomon Islands—						
Bougainville ..	9,160	23,500	32,660	17,976	..	17,976
Buka and adjoining islands ..	6,810	..	6,810	7,576	..	7,576
Nissan Islands ..	1,562	..	1,562	1,091	..	1,091
Kilinaillau Islands ..	391	..	391	(f)	..	(f)
Nuguria, Tauu and Nukumanu Islands ..	218	..	218	180(g)	..	189(g)
Total Solomon Islands ..	18,141	23,500	41,641	26,823	20,000(b)	46,823
North-East New Guinea—						
District of Morobe ..	5,409	No esti- mate made	5,409	13,736	30,500(c)	..
District of Aitape ..	5,724		5,724	12,441		
District of Madang ..	24,402		24,402	16,191		
Total North-East New Guinea	35,535	..	35,535	42,368	30,500(b)	72,868
Grand Total for the Territory	152,075	78,000(e)	230,075(e)	187,517	63,500(c)	251,017(c)

(a) For areas in which count and estimate made, see map published with Report for 1921-22. The areas are, in most of the islands, not the same as for the count and estimate of 1914, and accordingly no direct comparison can be made between the totals for the two years. (b) These are rough estimates only. (c) Not including any estimate of the population of North-East New Guinea not under Government influence. (d) Included in remainder of New Britain. (e) Not including Tench Island.

(f) Included with Buka.

(g) Nuguria Islands included with Buka.

§ 5. The Natives.

1. **Description.**—The natives* of North-East New Guinea are for the most part mixed Papuans and Melanesians, the former prevailing inland, and the latter along the coast. They are split up into many tribes, between whom, where Government influence has not been established, there is continual strife.

The natives of the Bismarck Archipelago and the Solomon Islands are chiefly Melanesians, but there are many racial elements which differ from one another in appearance, manners, customs and speech. The Admiralty Islanders show a Papuan and perhaps Polynesian admixture, and the natives in the extreme west of the Archipelago have Malay or even Chinese affinities. The natives of the Baining District in the north-east of New Britain speak a Papuan language. The small islands to the east of New Ireland, and the eastern coast of Bougainville show Polynesian influence. (See map in Meyer's "*Das Deutsche Kolonialreich*," Vol. 2.)

Most of the islanders are energetic, and of good physique, with the exception of those on some of the smaller western islands, and the inhabitants of the Gazelle Peninsula (New Britain), who are weak and much diseased.

In colour the natives vary from a light brown to an intense black. As a rule they live in permanent habitations constructed of light wooden frames with grass thatch. Especially in the Bismarck Archipelago and the Solomons they are assiduous cultivators, and raise in their fenced gardens large quantities of taro, yams, bananas, sugar-cane, and coconuts. In some parts there are extensive sago swamps from which much food is obtained. On the sea coast fish are caught in ingeniously contrived traps. Pigs and wallaby furnish occasional supplies of meat.

Many languages are used in the Territory. The Germans made some attempt to encourage the use of German, but with little success. At the native school at Namanula, the dialect of the Blanche Bay natives was taught, with the idea of spreading it throughout the Protectorate, but this plan had made little progress when the school was closed in 1914. The "*lingua franca*" throughout the Territory was "*bêche-de-mer*" or "*pidgin*" English.

2. **Treatment under German Rule.**—In their treatment of the natives, the Germans allowed practices which are distasteful to public opinion. Abuses occurred in connexion with the recruiting of labourers for the plantations; and employers were allowed to flog their labourers for offences in relation to their employment. Nevertheless, the German policy has been described by a well-informed missionary as being, on the whole, just and progressive.

The control of the natives by the German Government was carried out by District Officers, who were stationed at head-quarters in the various Districts into which the Protectorate was divided. These District Officers dispensed minor justice, and organized patrols throughout their districts for the purpose of collecting taxes in places where that was practicable, and of securing order amongst the native tribes, who were prone to wage war on each other.

It was the practice to ascertain the man of greatest influence in each community and appoint him "*Luluai*," or chief; a second native was chosen as "*Tultul*," or interpreter, through whom Government instructions were conveyed to the "*Luluai*," who was held responsible for their execution and for the general welfare of the people. There were very large areas, chiefly on the mainland, which were not under Government influence, and of which little was known. Although Government influence was much extended during the military occupation, there are still large areas in the islands which have never been visited by white men, and nearly a quarter of the mainland is unexplored.

The education of the natives was left by the German Government to the missionaries, but they were able to reach only a small proportion of the population. In 1907 the Government opened a school at Namanula, near Rabaul, to give elementary education and to train the natives in handicrafts. Pupils came from all parts of the Protectorate, and in 1914 they had increased to 121. By 1913 it had become possible to employ ex-pupils in the offices and works of the Government. Before the outbreak of war, plans were in preparation to establish a workshop at Rabaul for industrial training, and to open schools at out-stations. The results of the schools were of good promise, and

* An account of the natives of North-East New Britain will be found on pp. 25-40 of the Report for 1921-22.

encourage the hope that a considerable number of the natives may prove fit for training as clerks, artisans, motor drivers, and the like, if not for the lower grades of the professions.

3. Treatment during Australian Military Occupation.—When the Australian Forces occupied the Territory, a draft was found of an amending Native Labour Ordinance which the German Government was about to bring into force; and this formed the basis of the Native Labour Regulations enacted by the Military Administrator in 1915. An important amendment in the German draft was, however, made by prohibiting the corporal chastisement of any labourer by any plantation owner or any person other than a Government official duly appointed in that behalf in pursuance of a Judge's order or the sentence of a Court. In 1919 the flogging of natives, under any circumstances whatsoever, was forbidden. Other changes in regard to native labourers made during the Military Administration included the provision of additional safeguards in regard to recruiting; and attention was also given to the housing, food, clothing, medical attendance, and general comfort and well-being of natives working on plantations. Despite the abolition of methods of force in compelling native labourers to work, the number of indentured labourers largely increased during the Military Occupation. In 1914, according to the German returns, there were 17,529 labourers on plantations; on 30th June, 1921, there were 27,728.

4. Native Policy of Present Administration.—(i) *Objects.* Among the principal objects of the native policy of the Civil Administration are—

- (a) to stop the evils which in the past have been connected with recruiting;
- (b) to induce recruits to bring their wives with them;
- (c) to introduce more moral and cleaner surroundings and habits in village life;
- (d) to assemble isolated families into village communities;
- (e) by the institution of model villages to create in the native new and legitimate wants;
- (f) to introduce healthy amusements;
- (g) to extend the influence of the Administration into the interior;
- (h) to educate the natives in handicrafts and other callings;
- (i) by a campaign against hookworm and other diseases, and by attention to sanitation, to improve the health of the natives;
- and (j) to encourage the development of native-owned plantations.

(ii) *Native Labour.* The Commonwealth has two principal obligations in its government of the Territory. Under the Mandate it must "promote to the utmost the material and moral well-being and the social progress" of the natives; and it must see that the Territory makes its contribution of tropical products for the use of the world. With the performance of each of these obligations, the problem of the best method of making use of the labour of the natives is intimately connected.

Various views are held on this question. Some consider that the native should be encouraged to make plantations for himself, others that he should work as a labourer on plantations owned by white settlers. The latter method means, in the circumstances of New Guinea, that for the most part native labourers must be engaged under contract or indenture, breach of which is punishable by a Court, to serve for a term of years at a distance from their homes. Those who favour the encouragement of native agriculture point to the evils of life on plantations, and the damage to the maintenance of the population and the disintegration of village life caused by the absence from villages of a large proportion of the young men. They claim that the system of indenture is discredited and abandoned throughout the world, except in the Western Pacific, and that the experience of British Tropical Africa shows that the encouragement of native agriculture is likely to be more favourable to the welfare of the native and to result in a larger production. Those who favour the plantation system claim that the natives have as yet so few needs that it is idle to expect that they will produce more than they can consume, that life on a plantation is, in the circumstances of the Territory, the best means of introducing the native to civilization, and that the natives who work on plantations are, by better feeding and by medical attention, made physically stronger and kept in better health than those who remain in the villages. They also point out that the natives formerly led a strenuous life of fighting, cultivation, and hunting, and that the peace of European government and the use of European tools have done away with the need for strenuous action. Some new activity must be substituted unless the native is to perish; and this can best be found in labour on plantations.

The German Government favoured the plantation system, but there was also an active native agriculture. It was estimated in 1913, and again in 1920, that the output of native-produced copra reached 7,000 tons. In 1921-22, with a lower price, the production was about 6,000 tons. It is only when the price is high that the product of the native plantations is brought readily to market; and steps have had to be taken by the Administration to compel natives to keep their plantations free from fallen coconuts, which attract pests.

The recruiting and employment of natives as labourers by Europeans is now regulated by the Native Labour Ordinance 1922, which consolidated with some amendments the Native Labour Ordinances of the Military Occupation. The Ordinance applies to all employment of natives by Europeans, except of local natives living within 20 miles of the place of employment and working as day labourers for not more than three months. The recruiting of natives is allowed only for employment in the Territory or in Nauru; and there are strict safeguards in regard to the removal of natives from the Territory. Natives may be recruited only if in good health, or full physical development, and if not under the age of twelve, or if not decrepit from age. Girls and women may not be recruited, except in the case of married women with the consent of and for work at the same place as their husbands; if unmarried, except for domestic service and with the special consent of the Administrator. Natives must be examined by a medical officer or medical assistant, and attend before a District Officer for approval and registration of their contracts before they commence work. The ordinary period for a contract of service is three years; if employed by the Administrator, five years. No punishment of employees by the employer is permitted, except the withholding of the weekly ration of tobacco, and this is to be reported to the District Officer. Any person in authority over a labourer who assaults or maltreats him is liable to a fine of £50 or imprisonment for six months.

Wages are fixed at a minimum of 5s. a month for male labourers, 4s. for females and 3s. for boys under sixteen; the maximum is 10s., unless the native has special qualifications; wages are to be paid wholly in cash. Not more than one-third of the amount earned may be paid at the end of each month; the balance is to be paid at the expiration of the period of service. Any overcharging of a native for goods bought by him is an offence.

All employers are required to provide medical attendance and medicines, and the Expropriation Board has hospitals at Rabaul, Kokopo, Kavieng, Kieta, Manus, Maron, and Vitu, besides hospitals on plantations. At the expiration of the contract of service, the native must be medically examined, his account examined and checked by the District Officer, payment of the amount due to him made in the presence of the District Officer, and the native returned at the employer's expense to his home.

During the year 1921-22, 11,171 natives were recruited. The total number under contract on 30th June, 1922, was 26,619. The number of these working on plantations was 20,155, of whom about 15,000 were employed by the Expropriation Board. Where the conditions are suitable the Administration encourages the natives to work as casual labourers. Among the Micronesian natives of the North Western Island a contract system has lately been introduced, under which the natives contract to cut and dry the copra on a plantation and to keep it free of weeds.

(iii) *Education of Natives.* The Administration opened in 1922 an elementary school at Kokopo, and a technical school and school of domestic economy at Rabaul. At the elementary school natives are trained as teachers for schools to be established in other parts of the Territory, for employment in the lower grades of the Administration service, and for entrance to the technical school. At the technical school, carpentry, rattan work, machine work, motor engineering, and plumbing are taught. The students at the various schools are showing great promise. (For the Mission schools, see sub-section 6, below.)

5. *Health of Natives.*—The natives suffer from many diseases—malaria, tuberculosis, leprosy, filariasis, ankylostomiasis (hookworm), dysentery, many skin diseases, syphilis, yaws, and others. Their diseased conditions gave great anxiety to the German Government, which obtained many careful reports and had formed plans immediately before the war for the establishment of a pathological institute at Rabaul, and for an increase in the medical services. The health of the natives has had close attention from the Civil Administration, and an interesting account of the measures taken is contained in the reports sent to the League of Nations. White medical assistants are being trained in

the hospitals for work on plantations, and native orderlies for service in the villages are being trained at Rabaul in the treatment of hookworm and the dressing of wounds. A campaign against hookworm has been carried on with the assistance of the International Health Board of the Rockefeller Foundation. There are Government hospitals for natives at Rabaul (150 patients), Kavieng (120), Kieta (100), Madang (70), Morobe (25), Aitape (60), Manus (50), Namatanai (80), Vanimo, Gasmata and Talasea.

6. **Missions.**—There are a number of mission societies working in the Territory. The Society of the Sacred Heart of Jesus works in the Bismarck Archipelago, the Society of the Holy Ghost along the coast of North-East New Guinea from Sek to the Dutch border, the Marists in Buka and Bougainville. These are Roman Catholic Missions. The Protestant Missions are the Australian Methodist Mission in New Britain and New Ireland, the Liebenzell Mission in the Admiralty Group, and the Rheinische Mission and the Neuendettelsauer Mission (now supported and staffed by the Lutheran Churches in Australia and America, which work along the coast of North-East New Guinea from Sek to the Papuan border. All these societies combine teaching and planting with their missionary work. They conduct native schools, (which in 1922 had altogether about 22,000 pupils) and own extensive plantations. Between them they possess 80,705 acres of land, of which about 15,000 acres are planted with coconuts. The number of Europeans engaged in mission work is about 250, of whom more than half belong to the Holy Ghost and Sacred Heart Missions. Some of the societies also have industrial schools in which intelligent natives and half-castes receive technical training, and three of the mission societies have small printing plants by which reading matter in one or other of the native languages is produced.

§ 6. Land Policy.

1. **Land Policy of the German Government.**—The policy of the German Government regarding tenure of land showed a preference for freehold tenure, in contrast to that in British possessions in the Pacific, in which settlers can usually obtain land from the Crown on lease only. In North-East New Guinea and in the larger islands of the Bismarck Archipelago land could easily be obtained by settlers of any nationality.

The authorities readily gave information as to available land, and assisted newcomers in obtaining labour. Good land was offered at from 5d. to 8s. per acre, and payment could be spread over several years.

A colony of small planters with 250 acres each was established in the Baining District of New Britain and, although some success was achieved, many of the settlers lacked the capital necessary to support the heavy initial expenses of cultivation.

The area sold by the German Government amounted to nearly 700,000 acres. The area in cultivation on 1st January, 1914, was 84,941 acres, of which 16,555 acres were on the mainland; and the area in bearing 27,995 acres, of which 5,236 acres were on the mainland.

The alienated land was held principally by large German companies and by Missions. The following particulars are taken from the Report of the Royal Commission on late German New Guinea (1919):—

LAND ALIENATED, 1919.

Particulars.	Area Held.	Approximate No. of Plantations.	Area Planted (in 1919).
	Acres.		Acres.
Neu Guinea Compagnie	368,118	31	21,962
Hamburgische Südsee Aktien Gesellschaft ..	62,271	24	9,985
Hernsheim and Company	8,549	31	6,698
H. R. Wahlen and Company	14,129	..	8,648
Missions	80,705	..	16,571
Smaller planters and companies numbering about 150, of whom about 120 were Germans	163,407	..	81,115
	697,179	..	144,979

Under the military administration the sale of land was suspended.

2. Land Policy of the Present Administration.—The Land Ordinance 1922 provides for sale as well as leasing of land belonging to the Crown. In permitting the sale of land, its policy is a departure from that usual in British possessions in the Pacific (including Papua), where leasing only of agricultural lands is permitted, but is a continuation of the German policy. The Government, however, has not yet announced whether sale or leasing is to be the usual practice; and the greater part of the Lands Ordinance is devoted to provisions for the leasing of lands. All Crown grants or leases are to contain a reservation to the Crown of all minerals, and of coal, shale and mineral oil. Leases are to be for a term not exceeding 99 years, except where a shorter period is provided. Crown lands, except in towns, are to be classified by a Land Board into land suitable for agriculture (Class A) and land not so suitable (Class B), and the unimproved value of the land is to be assessed. In the case of agricultural leases for more than 30 years, the rent is to be 5 per cent. of the unimproved value, with power to remit during the first ten years, and subject to re-appraisal every twenty years. The maximum area of land which may be held by any person under agricultural lease is not to exceed 5,000 acres, and the unimproved value is not to exceed £5,000. Pastoral leases of lands of Class B may be granted for terms not exceeding 30 years, at a rental of $2\frac{1}{2}$ per cent. of the unimproved value, subject to re-appraisal every ten years. Agricultural leases are to be subject to improvement conditions, and pastoral leases to stocking conditions. Leases of town allotments may be granted for terms not exceeding 99 years, at a rent to be fixed at such percentage of the unimproved value as is prescribed. Leases may be granted to Missions rent free.

3. Registration of Titles.—Under German law there was a system of registration of titles in a "Ground Book," but registration did not confer an indefeasible title. It is intended to replace this by a system of registration closely modelled on the Torrens system.

§ 7. Production.

1. General.—The Territory possesses great natural resources. The development of these has barely commenced; and a limit to economic progress is much more likely to be found in the scarcity of labour than in the exhaustion of resources.

There are no manufactures in the Territory, except of articles for native use.

2. Agriculture.—(i) *General.* No estimate has yet been made of the area of land suitable for agriculture; but it is certain that the area already alienated, if planted to its full capacity, would be far greater than the present native population could cultivate. The earliest traders contented themselves with the collection of native products (including copra), for which they exchanged "trade" goods. It was not until 1883 that the first plantation was laid out, at Ralum on Blanche Bay; the first plantation on the mainland was that of the New Guinea Company at Finsch Harbour, where the first settlement was placed in 1885.

The natives have been described as a people of peasant proprietors, and everywhere they practice a low form of agriculture. Their gardens afforded but a small amount of produce for oversea trade, and the exports of the Protectorate grew only as European plantations were made. Plantations extended slowly, for the Protectorate is almost everywhere covered with forest, and the clearing and planting of the land, even if labour can be had, necessarily occupies considerable time.

In the early years of the Protectorate, the demand for copra was much smaller than recently, and it was not foreseen that it would become the chief export. Experiments were accordingly made—principally by the New Guinea Company, which spent a large part of its capital in this work—with a number of tropical crops.

(a) *Tobacco.* This crop has been cultivated with success at Astrolabe Bay in North-East New Guinea, and in the Bismarck Archipelago. Plantation managers were brought from Sumatra, but the Dutch Government, fearing competition, forbade the New Guinea Company to take skilled native labourers to their new plantations. Labourers were ultimately obtained from China and the Straits Settlements, and by 1892 there were over 1,800 Malay and Chinese coolies on the mainland; but, owing to

the heavy mortality, the number soon dropped to less than 1,000. By 1893 there were 500 acres under tobacco, and the export reached 77 tons. Tobacco of high quality, rivalling the best Sumatra leaf, is said to have been produced. Later, the growing of tobacco on European plantations was abandoned, partly, it is said, for want of intelligent labour, although it continued to be grown by the natives for their own use.

(b) *Cotton*. The New Guinea Company also experimented in the growing of cotton, and it is said that a product of high quality was obtained. In 1896 the export amounted to 60 tons. In recent years this crop seems to have been almost abandoned; in 1921-22 exports of cotton to the value of only £253 were recorded.

(c) *Sisal Hemp*. There was a steady although small export of sisal hemp in German times. The quantity exported in 1913 was 10 tons, but none seems to have been exported since 1914. The principal plantation was at Melanua (Konstantinhafen) on Astrolabe Bay.

(d) *Cocoa*. Cocoa has been successfully grown, principally at Vitu (French Islands); in 1913, 137 tons were exported, in 1921-22, 152 tons.

(e) *Coffee*. Coffee has been grown with success, but there has been little production.

(f) *Rubber*. Several kinds of rubber-yielding plants are indigenous on the mainland, and rubber (mostly of the ficus and hevea varieties) was cultivated in a few European plantations. Most of these were planted with ficus elastica before it was realized that hevea brasiliensis, which yields Para rubber, would give a more valuable product. The general opinion among the planters seems to have been that the cultivation of the coconut is a safer and better investment than rubber, because the coconut offered a less fluctuating margin between profit and loss, and did not necessitate the employment of as many labourers as were required on a rubber plantation. It was also thought that the New Guinea native was not well suited for the work of tapping, and the close and careful attention that rubber trees demand. In 1913, 17 tons, valued at £6,000, were exported; in 1920-21, the export was 29 tons, valued at £2,900.

(g) *Copra*. The mainstay of the Territory has been the coconut palm. Indigenous in most of the islands, the coconut palm yielded copra to the traders from the beginning of European trade, and the plantations, commenced in 1882, have steadily extended in area and product, until 95 per cent. in value of the total exports of the Protectorate now consists of copra. The quantity exported in 1913 was 14,000 tons; in 1918, it was over 20,000 tons; and during the three years ending June, 1922, it has averaged 24,000 tons. The area under coconuts increased during the Military Occupation from 76,845 acres in 1914 to 133,960 acres at the end of 1918, and it is now 168,000 acres. The coconut takes about eight years to come into bearing, so that this increase in area is only now commencing to affect the output. The price of copra at Sydney, which is the principal market for the output of the Territory, declined from the very high figure of £32 per ton in 1920 (average) to an average of about £17 in the last six months of 1921. Although there has since been a slight increase in price, the production both of plantation and native copra, which in 1920 promised to increase very rapidly, has been somewhat checked.

(h) *Other Crops*. The climate and soil of the Territory are also suitable for the cultivation of rice, Manila hemp, cinchona, nutmeg, vanilla and maize. It has been proved that nearly all these can be grown successfully, but hitherto their cultivation has either not advanced beyond the experimental stage or has been attempted only on a small scale. Sugar-cane of many varieties flourishes, and the natives cultivate extensive areas for their own use; other indigenous food-producing plants include the sago palm, and the cassava plant (which yields arrowroot and tapioca and is used in the making of glucose).

(i) *Plants Yielding Power Alcohol*. It seems probable that alcohol for power purposes will be obtainable economically from the Territory. The sago palm and nipa palm yield as much as 60 gallons a ton, and in places are very abundant.

(ii) *Area of Plantations*. The areas of European plantations in the various islands in 1922 are shown in the table hereunder, from which it will be seen that the principal areas are in the north east of New Britain (Gazelle Peninsula), New Ireland and the vicinity of Astrolabe Bay in North-East New Guinea.

**TERRITORY OF NEW GUINEA.—EUROPEAN-OWNED PLANTATIONS,
30th JUNE, 1922.**

Island and District.	Coconuts.			Coffee.	Cocoa.	Rubber.	Other Crops.	Total Area Cultivated.
	Bearing.	Not Bearing.	Total.					
	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.
New Britain, Duke of York, and Vitu Islands—								
District of Rabaul ..	23,407	15,140	38,547	17	310	749	202	39,825
District of Talasea ..	3,625	1,435	5,060	25	660	..	23	5,768
District of Gasmata ..	1,005	2,876	3,881	..	..	..	45	3,926
Total ..	28,037	19,451	47,488	42	970	749	270	49,519
New Ireland, Lavongai and Offlying Islands—								
District of Kavieng ..	15,052	18,340	33,392	..	..	..	17	33,409
District of Namatanai ..	6,390	7,188	13,578	..	2	..	35	13,615
Total ..	21,442	25,528	46,970	..	2	..	52	47,024
Admiralty and North Western Islands—								
District of Manus ..	9,950	8,570	18,520	..	..	..	..	18,520
Solomon Islands—								
District of Kieta ..	6,669	14,700	21,369	26	..	458	258	22,111
North-East New Guinea—								
District of Aitape ..	1,899	4,729	6,628	..	..	..	..	6,628
District of Madang ..	9,220	14,061	23,281	..	2	1,794	441	25,518
District of Morobe ..	995	2,809	3,804	..	..	..	148	3,952
Total ..	12,114	21,599	33,713	..	2	1,794	589	36,098
Total for Territory ..	78,212	89,848	168,060	68	974	3,001	1,169	173,272

The area of European plantations at various periods from 1885 to 1922 is shown hereunder :—

**TERRITORY OF NEW GUINEA.—AREA OF EUROPEAN PLANTATIONS,
1885 TO 1922.**

Year.						Total Area.	Area in Coconuts (including Area not in Bearing).
						Acres.	Acres.
1885	..	..	..	..	..	148	(a)
1895	..	..	..	..	..	2,152	(a)
1911	..	..	..	..	..	58,837	51,510
1912	..	..	..	..	..	63,300	56,133
1913	..	..	..	..	..	72,473	64,822
1914	..	..	..	..	..	84,941	76,845(b)
1918 (December)		..	..	..	..	..	133,960(c)
1922	..	..	..	..	..	173,272	168,060

(a) Not recorded. in bearing.

(b) Of which 23,522 acres were in bearing.

(c) Of which 44,169 acres were

3. Live Stock.—There is little natural pasture in the Territory, but the coconut plantations are now of a sufficient area to maintain numerous live stock. In 1922 there were 727 horses, 6,972 cattle, 3,404 sheep, 3,955 goats, and 5,397 pigs (exclusive of the large number of pigs kept by the natives). The horses were either of Australian origin, and more or less thoroughbred, or else they came from the Dutch Indies. From this parent stock horses were bred locally. A cross between the Australian horses and the "Macassars" has given a satisfactory result. The cattle represented a variety of breeds, such as Bali, Indian Zebu, Australian Jersey and Guernsey, and the small Javanese breed. They are principally used for keeping down the grass in the plantations, and for supplying native labourers with meat. Sheep are also kept principally for the sake of the meat. They are mostly of the Dutch-Indian breed, but Australian sheep have been introduced as an experiment, and the wool has, so far, retained its high quality. Pigs seem to thrive better than any other animal. In and near European settlements the Yorkshire and Berkshire breeds are now fairly common. The native pig is an inferior animal, but it is hardy, frugal, and fast growing. Crossed with the Yorkshire and Berkshire excellent results have been obtained.

4. Timber.—The timber resources of the Territory are not yet fully known. Both hardwood and softwood are found in several varieties, some of which are of excellent quality. In Bismarck Archipelago the areas of serviceable timber in sufficient quantities to be of commercial value do not appear to be extensive. The timber required for house and ship-building and for other purposes is mostly obtained locally. In North-East New Guinea the Neuendettelsauer Mission and the Holy Ghost Mission both possess up-to-date saw-milling plants, while most of the timber required in the Archipelago is supplied by the Sacred Heart Mission's sawmill at the eastern end of New Britain.

The Timber Ordinance 1922 provides for the issue of permits and licences to cut timber. Timber growing on native lands cannot be acquired by private purchasers directly from the natives, but only through the Administration. A royalty (the amount to be fixed by regulation) is to be paid on all timber exported.

5. Fisheries.—The wealth of the waters of the Territory has so far been little exploited. Fish are caught at many places along the coast, but only to supply the small local demand of the natives and of the few Europeans living there. Pearl-shell is exported in fair quantities, while trepang, shark fins, trochus-shell, and tortoise-shell are also articles of export. The value of the marine products exported during the three years ended 30th June, 1922, averaged £26,800.

6. Mining.*—There has been little mining in the Territory, and knowledge of the minerals is as yet but scanty.

Gold has been discovered in the Upper Ramu River, on the Waria River, which enters the sea near the Papuan boundary, and on the Francisco and Markham Rivers, both of which flow into the Huon Gulf. These deposits are in river alluvium and in small quartz reefs. Osmiridium is found in Papua in streams draining the main range, and it will probably be found also in the Territory. It is reported to have been found on the upper tributaries of the Ramu. Platinum has been reported from the Kabenau River flowing into Astrolabe Bay, but its occurrence is disputed. Copper has been discovered in the form of chalcopyrite and malachite in the Baining District.

Iron occurs as magnetite and haematite in the Baining District, apparently in large quantities.

Sulphur occurs in several localities in the volcanic regions of the Territory. The deposits are not extensive so far as surface indications go, but are fairly pure and crystalline.

Phosphates suitable for use in the making of manures are found in the Purdy Islands (District of Manus).

* Fuller details of the deposits of minerals in the Territory will be found in E. R. Stanley's Report on Salient Geological Features and Natural Resources of the Territory (printed as Appendix B. to the Report for 1921-22).

Brown coal has been found on the mainland in the vicinity of Astrolabe Bay, and in the southern portion of New Ireland.

Petroleum.—It has been known for some years past that there were indications of mineral oil on the mainland; but it was not till 1921 that a thorough geological examination was made by a party of geologists under the joint control of the Anglo-Persian Oil Company and the Commonwealth Government. This party surveyed or determined prospects over an area of 2,000 square miles in the Aitape and Madang Districts. One of the areas examined in detail was about 50 miles along the coast of the Aitape District, including the outfall of the Wakip River, which enters the sea about 150 miles easterly from the Dutch frontier and on which oil seepages were previously known to exist. A small scale map of this area was made, and its geological structure was studied in detail. As a result of their examination, the geologists reported that, while small quantities of oil could probably be obtained in the immediate vicinity of the main seepages, they believed that such operations could not repay outlay and working costs, and they could not recommend a test well.

Further inland, in the basin of the Sepik River, although throughout a great thickness of beds no oil shows were found, geological conditions were more favourable. This region is traversed by a general strike line which passes also through the Wakde District in Dutch New Guinea, about 80 miles over the border, where oil was known to occur. The geologist therefore felt justified in submitting a plan for a further geological survey of the middle Sepik basin. The Commonwealth Government has announced in June, 1923, that the Territory would now be opened for prospecting for oil.

7. Water Power.—No survey has been made of the water power available in the Territory. It has been estimated that 10,000,000 horse-power are readily available in Papua, and as the mountainous portion of the main island included in the Mandate is similar in rainfall, height of catchment, and steepness of slope to the corresponding area in Papua, it seems certain that a very large quantity of power can be developed. Rivers suitable for developing power are found also in parts of New Britain and other islands.

§ 8. Trade.

1. Total Trade.—The value of the imports, exports, and total trade at various periods since 1897, and during each of the last five years, is given in the table hereunder:—

TERRITORY OF NEW GUINEA.—TRADE, 1887 TO 1922.

Year.				Imports.	Exports.	Total.
				£	£	£
1887 ..	..	..	..	17,133	19,580	36,713
1897 ..	..	..	..	36,713	31,352	68,065
1907 ..	..	..	..	166,585	97,563	264,148
1917-18	..	..	..	258,040	404,504	662,544
1918-19	..	..	..	271,861	269,666	541,527
1919-20	..	..	..	506,767	849,422	1,356,189
1920-21	..	..	..	661,441	673,992	1,335,433
1921-22	..	..	..	468,711	499,197	967,908

The import values for the last five years are exclusive of money and Government stores, excepting those for the last year in which the value of stores is included.

2. **Principal Items of Import.**—The principal items of import during each of the last five years are given in the following table :—

TERRITORY OF NEW GUINEA.—IMPORTS, VALUE OF ITEMS, 1917-18 TO 1921-22.

Commodities.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Foodstuffs	83,771	67,410	190,442	241,280	113,238
Beverages (non-alcoholic) ..	(a)	(a)	(a)	2,429	1,360
Alcoholic Liquors	16,079	16,021	31,744	39,841	29,703
Tobacco	20,450	20,618	44,936	53,446	41,392
Live animals	246	294	1,429	845	4,276
Copra Sacks	(a)	(a)	(a)	20,555	23,152
Apparel	52,263	74,806	76,935	125,177	37,842
Oils	16,199	14,033	23,835	39,048	26,506
Hardware and Machinery ..	34,949	48,942	64,912	69,386	27,949
Motor Cars and Accessories	(a)	(a)	(a)	20,141	11,953
Firearms, Ammunition, and Explosives	(a)	(a)	(a)	3,678	1,704
Timber and Building Materials	(a)	(a)	(a)	21,471	7,200
Paper and Stationery	1,748	1,634	1,225	4,366	4,459
Medicines and Drugs	5,587	3,435	5,414	10,300	10,290
Miscellaneous	26,748	24,668	65,895	9,478	17,687
Coal	(b)	(b)	(b)	(b)	(c)
Money	(b)	(b)	(b)	(b)	(b)
Government Stores	(b)	(a)	(b)	(b)	110,000
Total	258,040(d)	271,861(d)	506,767(d)	661,441(d)	468,711(e)

(a) Not separately recorded. (b) Not recorded. (c) Not separately recorded, included in Government Stores. (d) Not including money or Government Stores. (e) Not including money.

3. **Imports from Various Countries.**—The countries of origin of the articles imported during each of the last five years were as follows :—

**TERRITORY OF NEW GUINEA.—IMPORTS FROM VARIOUS COUNTRIES,
1917-18 TO 1921-22.**

Year.	Australia. (a)	Japan.	Total.
	£	£	£
1917-1918	244,701	13,339	258,040
1918-1919	231,175	40,686	271,861
1919-1920	506,767	..	506,767
1920-1921	661,441	..	661,441
1921-1922	468,711	..	468,711

(a) According to the statistics collected in Australia, about 40 per cent. of the exports from Australia to New Guinea during the five years ended 30th June, 1922, were of Australian origin.

4. **Principal Items of Export.**—Values of the principal items of export for the last five years are shown hereunder :—

TERRITORY OF NEW GUINEA.—EXPORTS, VALUE OF ITEMS. 1917-18 TO 1921-22.

Commodity.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Copra	369,837	244,314	745,057	641,045	474,110
Cocoa	11,159	8,464	15,530	9,105	9,465
Stone and Ivory Nuts	180	333	271	531	..
Rubber	1,673	1,196	1,104	2,900	..
Sisal Hemp .. .. .	..	..	..	..	..
Other Agricultural Products	1,222	683	2	20	..
Birds of Paradise and other Feathers .. .. .	..	100	34,133	5,812	2,027
Mother of Pearl and other Marine Products	20,433	14,576	53,285	14,579	13,595
Miscellaneous .. .. .	..	..	40	..	..
Total	404,504	269,666	849,422	673,992	499,197

5. **Exports of Copra, Cocoa, and Rubber.**—The next table shows the quantities, where available, of the exports of these items during the last five years :—

TERRITORY OF NEW GUINEA.—EXPORTS OF COPRA, COCOA, AND RUBBER, 1917-18 TO 1921-22.

Commodity.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Tons.	Tons.	Tons.	Tons.	Tons.
Copra	19,708	14,886	22,708	23,735	25,894
Cocoa	144	112	140	133	152
Rubber	(a)	(a)	(a)	29	..

(a) Not recorded

6. **Destination of Exports.**—The value of the exports consigned to various countries during the last five years is shown in the appended table :—

TERRITORY OF NEW GUINEA.—DESTINATION OF EXPORTS, 1917-18 TO 1921-22.

Year.	Australia.	United States.	Japan.	Other Countries.	Total.
	£	£	£	£	£
1917-1918	348,404	43,800	12,300	..	404,504
1918-1919	265,266	..	4,400	..	269,666
1919-1920	660,422	..	..	189,000(a)	849,422
1920-1921	673,992	..	..	..	673,992
1921-1922	499,197	..	..	..	499,197

(a) Inclusive of 5,113 tons Copra to the United Kingdom.

§ 9. Shipping and Communication.

1. **General.**—A subsidized mail service between the Territory and Australia is maintained by Burns, Philp and Co. Ltd. Occasional cargo steamers take shipments of copra direct to European and American markets.

2. **Oversea Tonnage in 1921-22.**—The number and net tonnage of oversea vessels which entered and cleared the Territory during the year 1921-22 are shown hereunder :—

TERRITORY OF NEW GUINEA.—STATISTICS OF SHIPPING. 1921-22.

Nationality.	Entered.		Cleared.		Total.	
	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.
British	39	50,175	37	48,917	76	99,092
Finnish	1	1,295	..	..	1	1,295
United States	1	64	1	64	2	128
Total	41	51,534	38	48,981	79	100,515

Country from which Entered or for which Cleared.	Entered.		Cleared.		Total.	
	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.	Vessels.	Net Tonnage.
Australia	39	49,706	35	47,089	74	96,795
Nauru	2	1,828	2	1,828	4	3,656
Dutch New Guinea .. ..	..	..	1	64	1	64
Total	41	51,534	38	48,981	79	100,515

3. **Local Shipping.**—The Administration maintains a service of small steamers which bring cargo from outports to the ports of call of the oversea vessels, while there are also privately owned schooners and launches.

4. **Land Communication.**—Means of communication on land are scanty. There are no railways. Roads lead from Rabaul to places within 30 or 40 miles, and there is a road 170 miles long in New Ireland. Elsewhere there are few roads outside plantations and the stations of the District Officers. The large rivers of the mainland are as yet but little used.

There is a high power wireless station at Bitu Paka near Rabaul, and low power stations at Kieta, Manus, Madang, Aitape, and Morobe; since 1st July, 1921, all these have been placed under the control of Amalgamated Wireless (Australasia) Limited.

§ 10. Revenue and Expenditure.

1. Revenue.—Details of the revenue collected from various sources during each of the last five years are given hereunder :—

TERRITORY OF NEW GUINEA.—REVENUE, 1917-18 TO 1921-22.

Heading.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Trade and Customs—	£	£	£	£	£
Imports	41,597	35,161	} 98,658	{ 59,865	49,031
Exports	24,085	18,596			
Total	65,682	53,757	98,658	92,900	87,453
Taxes and Fees—					
Licences	4,307	6,838	7,587	7,977	5,588
Business Tax	4,264	6,019	8,134	8,860	20,989
Law Department	1,151	1,157	2,282	1,416	1,942
Lands Department	5,897	3,738	11,382	4,438	6,858
Stamp Duties .. ..	..	..	..	..	1,000
Native Affairs—					
Head Tax	10,686	20,970	11,210	15,522	20,546
Indenture Fees	2,509	3,787	} 3,856	{ 2,580	1,689
Fees and Fines	256	319			
Income Tax .. ..	..	..	..	..	209
Total	29,070	42,828	44,451	41,033	58,821
Miscellaneous—					
Trade and Customs	2,715	2,003	2,438	4,284	6,470
Post Office	1,911	3,084	4,061	3,852	6,348
Wireless Service	1,724	3,137	4,781	4,181	5,839
Receipts from Administration					
Shipping Services	19,633	20,700	28,061	23,921	36,599
Plantations	3,511	1,934	5,637	4,036	8,824
Hospital Receipts	1,948	3,050	3,027	4,845	2,884
Interest	358	218	81	164	..
Miscellaneous	13,369	12,925	10,965	14,741	(a) 44,268
Total	45,169	47,051	59,051	60,024	111,232
GRAND TOTAL	139,921	143,636	202,160	193,957	257,506

(a) Including sale of stores, £18,762.

2. Expenditure.—The expenditure for the financial year 1921-22 was distributed as follows :—

TERRITORY OF NEW GUINEA.—EXPENDITURE, 1921-22.

Administrator	£3,031	Trade and Customs	5,826
Government Secretary	15,919	Agriculture	6,719
Justice	4,578	Public Health	22,526
Treasury	27,522	District Services	60,093
Audit	2,200	Administration Shipping Service	37,777
Lands and Surveys	8,771	Wireless Service	17,031
Native Affairs	15,413		
Public Works and Wharves	34,160	Total	£261,566

F. NAURU.*

1. **General.**—Nauru is a circular atoll having an area of 5,400 acres, of which about four-fifths is phosphate bearing. The climate is healthy and equable; the lowest temperature recorded in the five years, 1916 to 1920, was 68 degrees, the highest 99.5 degrees. The rainfall is irregular; in 1916, 18.33 inches fell, in 1919, 167.64 inches. Malaria is unknown, but tuberculosis and leprosy are prevalent among the natives, and in 1921 an epidemic of influenza carried off 230 Nauruans.

2. **History.**—The island, which is situated in longitude 166° east and is only 26 miles south of the equator, was, prior to 1914, part of the protectorate of German New Guinea.

In November, 1914, Nauru was occupied by a detachment from the Australian Expedition at Rabaul; and it was included in the cession of colonies made by Germany in 1919 to the Allied and Associated Powers, whose representatives agreed that a mandate over it should be given to His Majesty the King. On 2nd July, 1919, the British, Commonwealth, and New Zealand Governments agreed that the administration of the island (which, since 1915, had been in charge of an official appointed by the British Colonial Office) should be vested in an Administrator; the first Administrator was to be appointed for a term of five years by the Australian Government, and thereafter the Administrator was to be appointed in such manner as the three Governments decided. This Agreement was approved by the Commonwealth Parliament in the Nauru Island Agreement Act 1919, and is printed in the Schedule to that Act.

The first Administrator appointed by the Commonwealth Government assumed duty in June, 1921.

The Mandate for Nauru, which was issued by the Council of the League of Nations in December, 1920, is in terms similar to that for the Territory of New Guinea (see § 3 of the section devoted to that Territory).

3. **Administration.**—The Administrator has all the powers of government—administrative, legislative, and judicial—in the island. All expenses of administration are met from local revenue.

4. **Population.**—Figures for population from 1918 to 1922 are given hereunder:—

NAURU.—POPULATION, 1918 TO 1922.

Population.	1918.	1919.	1920.	Census of 24th April, 1921.	31st Decem- ber, 1922.
Europeans	88	88	91	119	128
Chinese	136	134	599	597	582
Nauruans	1,273	1,279	1,068	1,084	1,156
Other South Sea Islanders ..	241	275	227	266	290(a)

(a) Including 141 natives of New Guinea employed by the British Phosphate Commission.

During 1922, the native population increased by 72. The birth rate among the Nauruans was 53 per 1,000, the death rate 14 per 1,000, and the rate of infantile mortality 102 per 1,000.

5. **Phosphate Deposits.**—(i) *General.* The deposits were discovered in 1900, and, were worked by the Pacific Phosphate Company, which also worked the deposits on Ocean Island (about 165 miles east of Nauru and part of the Gilbert and Ellice Islands Colony administered by the Colonial office). The quantity on the two islands has been estimated at not less than 100,000,000 tons, and the rock phosphate, as shipped, averages 85 per cent. to 88 per cent. of tribasic phosphate of lime. About 3,750,000 tons have already been removed; the area so far worked is only about 50 acres.

* See Map published with the Report for 1922. See also *Report on Administration of Nauru to 17th December, 1920* (P.P. No. 5 of 1922), *ditto, 17th December, 1920 to 31st December, 1921* (P.P. No. 4 of 1922), *ditto, 1922* (P.P. No. 20 of 1923), *Report and Accounts of British Phosphate Commission for year ended 30th June, 1921* (P.P. No. 23 of 1922), and *Nauru and Ocean Islands: Their Phosphate Deposits and Working*, by H. B. Pope (P.P. No. 148 of 1921).

The interests of the Pacific Phosphate Company in the two islands (though not in other islands in the Pacific in which it has workings) were bought by the British, Commonwealth, and New Zealand Governments in 1919 for £3,500,000, the purchase money being contributed in the proportions of 42, 42, and 16 per cent. respectively. The Agreement of 2nd July, 1919, provides for the working of the deposits by the British Phosphate Commission of three members, one appointed by each Government; and the three countries are to receive the output in the same proportions of 42, 42, and 16 per cent.

(ii) *Output.* The output from the two islands in 1913, the last year before the war, was 350,000 tons. During the first two years of the Commission's management it was as follows:—

NAURU AND OCEAN ISLAND.—OUTPUT OF PHOSPHATES, 1921, 1922.

Year.	To Australia.	To New Zealand.	To United Kingdom.	To other Countries.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.
1920-21	265,750 (72.96%)	17,100 (4.69%)	16,700 (4.59%)	64,701 (17.76%)	364,251
1921-22	170,489 (47.20%)	38,432 (10.64%)	16,074 (4.45%)	136,210 (37.71%)	361,205

From Nauru alone, during the calendar year 1922, the export was 182,170 tons, of which 143,920 tons went to Australia, and 38,250 tons to New Zealand.

(iii) *Accounts of Commission.* The trading accounts of the Commission may be summarized as follows:—

BRITISH PHOSPHATE COMMISSION.—TRADING ACCOUNTS.

Particulars.	1920-21.	1921-22.
	£	£
Receipts from sales and other credits, less freights and insurance	691,643	823,045
F.o.b. cost of phosphate, including interest on capital, contribution to a sinking fund for the redemption of capital (a) and other charges	688,958	732,407
Balance	2,685(b)	90,638(c)
F.o.b. cost per ton	37s. 10d.	40s. 7d.

(a) Amount contributed to sinking fund was £222,521 in 1920-21, and £229,658 in 1921-22.
(b) Appropriated to Reserve Account. (c) Shown as "Government Appropriation Account."

The amount due by the Commission to the partner Governments for purchase money and other capital sums was £3,666,457 on 30th June, 1921; by 30th June, 1922, this was reduced to £3,607,495. The contribution to sinking fund paid by the Commission provides for interest at 6 per cent. and extinction of the capital sum in 50 years from 1st July, 1920.

(iv) *Charges for Phosphate.* Up to 30th June, 1922, the Commission's charges for phosphate landed in Australia was from 75s. to 80s. per ton; the price was reduced from 1st July, 1922, to 49s. 3d. in the Eastern States and 52s. 3d. in Western Australia. On 1st July, 1923, it was further reduced to 46s. in all States.

(v) *Employees.* The employees of the Commission at Nauru consist of 60 Europeans, about 580 Chinese, and about 260 natives of New Guinea and islands in the Pacific south of the equator. Only a very few Nauruans are employed.

6. *Trade.*—Information regarding imports and exports for years 1918 to 1922 is appended herewith.

NAURU.—IMPORTS AND EXPORTS, 1918 TO 1922.

Heading.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Imports	55,840	45,977	109,119	106,486	78,320
Exports—	tons.	tons.	tons.	tons.	tons.
Phosphate	76,440	69,336	149,609	187,680	182,170
Copra	10	124	189	..	93

7. *Revenue and Expenditure.*—The revenue and expenditure of the Administration during the years 1918 to 1922 were as follows:—

NAURU.—REVENUE AND EXPENDITURE, 1918 TO 1922.

Heading.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Revenue	8,556	6,761	10,611	10,192	11,182
Expenditure	5,042	4,727	4,818	12,712	11,424

Of the revenue in 1922, £3,880 was royalty on phosphate paid by the British Phosphate Commission, and a large part of the remainder was derived directly or indirectly from the Commission

[NOTE.]—Although of greater extent than those in other Pacific Islands and of higher quality than any large deposits elsewhere, the deposits in Nauru and Ocean Islands are not comparable, in extent or output with those of Northern Africa and the United States. Of the world's output of 6,500,000 tons of phosphate rock in 1920, Tunis, Algeria and Egypt produced nearly 2,000,000 tons, and Florida and other fields in the United States over 4,000,000 tons. The price of the United States product varied from about \$14 for 78 per cent. phosphate to \$4 for lower grades (*Mineral Industry*, 1920).

CHAPTER XVI.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. Early Statistics.—In earlier issues of the Year Book will be found a brief reference to the pastoral industry in Australia prior to the year 1860. (See Year Book No. 6, page 330).

2. Subsequent Statistics.—While the statistical records of live stock in Australia prior to the year 1860 are somewhat defective, from that year onwards fairly complete particulars are available for most of the States. At the present time, statistics of live stock are collected annually in all the States principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, these particulars were not collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for Australia for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. Increase in Live Stock.—Particulars concerning the numbers of each of the principal kinds of live stock in Australia at decennial intervals from 1860 to 1910, and from 1916 onwards in single years, are given in the following table, and are shown continuously in the graphs hereinafter.

During the sixty-one years covered by the table the live stock of Australia increased considerably, horses 465 per cent., cattle 265 per cent., sheep 308 per cent., and pigs 174 per cent. The average annual increases which these aggregates represent are as follows:—Horses 2.89 per cent.; cattle 2.15 per cent.; sheep 2.33 per cent.; and pigs, 1.75 per cent.

LIVE STOCK.—AUSTRALIA, 1860 TO 1921.

Year.				Horses.	Cattle.	Sheep.	Pigs.
1860	..	..	..	431,525	3,957,915	20,135,286	351,096
1870	..	..	..	716,772	4,276,326	41,593,612	543,388
1880	..	..	..	1,061,078	7,523,000	62,176,027	815,776
1890	..	..	..	1,521,588	10,299,913	97,881,221	891,138
1900	..	..	..	1,609,654	8,640,225	70,602,995	950,349
1910	..	..	..	2,165,866	11,744,714	92,047,015	1,025,850
1916	..	..	..	2,436,148	10,459,237	76,668,604	1,006,763
1917	..	..	..	2,497,903	11,829,138	84,965,012	1,169,365
1918	..	..	..	2,527,149	12,738,852	87,086,236	913,902
1919	..	..	..	2,421,201	12,711,067	75,554,082	695,968
1920	..	..	..	2,415,510	13,499,737	77,897,555	764,406
1921	..	..	..	2,438,182	14,441,309	82,226,470	960,385

4. Fluctuations.—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895, and subsequent years, 1902, 1908, 1912, 1914–15, 1918 to 1920, and again in 1922–23, in which years the abnormal mortality amongst stock greatly reduced the existing numbers.

As an offset to these visitations, the process of re-stocking Australia is generally completed in a few years by the large increases which occur in the good seasons invariably supervening on the dry ones, thus bearing convincing testimony to the extraordinary recuperative powers of the country.

The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1918, 2,527,149; cattle, 1921, 14,441,309; sheep, 1891, 106,421,068; and pigs, 1917, 1,169,365.

5. Live Stock in Relation to Population.—The number of each kind of live stock per head of the population of Australia has varied during the past sixty one years in the manner shown in the succeeding table :—

LIVE STOCK PER HEAD OF POPULATION—AUSTRALIA, 1860 TO 1921.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ..	0.38	3.45	17.58	0.31	1916 ..	0.49	2.12	15.53	0.20
1870 ..	0.43	2.60	25.24	0.33	1917 ..	0.50	2.36	16.97	0.23
1880 ..	0.48	3.37	27.87	0.37	1918 ..	0.49	2.48	16.99	0.18
1890 ..	0.48	3.27	31.06	0.28	1919 ..	0.45	2.38	14.15	0.13
1900 ..	0.43	2.29	18.75	0.25	1920 ..	0.44	2.49	14.35	0.14
1910 ..	0.49	2.65	20.80	0.23	1921 ..	0.44	2.61	14.86	0.17

Considered in relation to population the most noticeable variations have been the largely reduced numbers of sheep and pigs in recent years, the reductions amounting to about one-half of the earlier figures. The number of cattle has also declined, though an upward trend has been in evidence since 1916, while the position of horses has remained stationary.

6. Live Stock in Relation to Area.—The numbers of live stock per square mile in the several States and Territories of Australia are given in the following table :—

LIVE STOCK PER SQUARE MILE.

States and Territories.	Date.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ..	30th June, 1922 ..	2.16	11.43	119.66	1.24
Victoria ..	1st March, 1922 ..	5.65	19.92	140.25	2.63
Queensland ..	31st Dec., 1921 ..	1.11	10.51	27.45	0.22
South Australia ..	30th June, 1922 ..	0.70	1.10	16.46	0.23
Western Australia ..	31st Dec., 1921 ..	0.18	0.92	6.67	0.06
Tasmania ..	1st March, 1922 ..	1.47	8.27	59.17	1.90
Northern Territory ..	30th Dec., 1921 ..	0.08	1.08	0.01	0.00
Fed. Cap. Territory ..	30th June, 1922 ..	1.38	8.82	161.37	0.36
Total ..	1921-22 ..	0.82	4.85	27.64	0.32

7. Minor Classes of Live Stock.—The numbers of minor classes of live stock returned for 1921-22 were as follows:—Goats, 240,908; camels, 11,738; mules and donkeys, 15,134; and ostriches, 780. Of these, goats and mules were most numerous in Queensland; camels and donkeys in Western Australia; and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product (mohair), and about 13,000 angora goats are included in the total of 240,908 goats shown above. Of these, 3,868 were in New South Wales, 2,007 in Western Australia, and 4,248 in Queensland, while the quantity of mohair produced in the latter State in 1921 was set down at 2,895 lbs., and the number of skins placed on the market was returned as 517.

8. Net Exports of Principal Pastoral Products.—The quantities by which the exports of the principal pastoral products of Australia exceeded the imports for the years 1917-18 to 1921-22 are as follows :—

NET EXPORTS OF PASTORAL PRODUCTS.—AUSTRALIA, 1917-18 TO 1921-22.

Products.	Unit of Quantity.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
QUANTITIES.						
Animals (living)—						
Cattle	No.	1,117	644	3,133	4,396	9,110
Horses	"	23,876	8,686	5,787	8,195	1,798
Sheep	"	9,080	18,001	21,601	19,307	36,111
Bones	cwt.	20,363	25,669	29,198	24,160	21,718
Glue Pieces and Sinews	"	11,015	3,878	8,158	-3,920	4,987
Glycerine	lb.	(a)	1,633,510	-21,745	-854,254	19,348
Hair	"	324,523	402,869	600,595	100,434	-126,037
Hoofs	cwt.	8,618	10,000	11,382	7,580	10,615
Horns	"	(a)	(a)	(a)	(a)	(a)
Meats—						
Frozen Beef	lb.	180,222,185	119,938,442	120,939,750	179,618,149	124,158,191
Frozen Mutton and Lamb	"	19,174,231	59,672,405	243,957,427	54,892,764	91,712,280
Frozen Rabbits and Hares	pair	13,164,307	5,132,983	9,622,150	3,925,004	4,857,404
Frozen, Other	lb.	8,286,035	12,329,539	11,397,792	7,901,468	6,676,605
Potted and Extract of	"	(a)	(a)	(a)	(a)	(a)
Preserved in Tins, etc.	"	43,036,310	65,118,256	47,550,045	8,296,500	9,133,860
Other (excluding Bacon and Ham)	"	261,301	424,777	755,141	482,317	344,167
Sausage Casings	"	(a)	(a)	(a)	(a)	(a)
Skins—						
Hides	No.	15,873	26,819	540,415	-8,317	80,415
Sheep	"	2,907,431	6,663,978	10,143,952	5,117,431	6,780,522
Rabbit and Hare	cwt.	71,990	117,569	127,452	49,427	74,224
Other (including Undressed Furs)	No.	(a)	(a)	(a)	(a)	(a)
Tallow	cwt.	345,849	870,950	712,307	524,220	893,772
Wool—						
Greasy	lb.	243,784,651	457,995,701	552,307,700	417,647,343	710,591,430
Scoured	"	62,865,373	106,313,411	84,900,446	61,525,697	102,346,835
Tops	"	4,571,357	2,822,578	6,148,118	6,598,681	6,200,505

NOTE.—The minus sign — signifies net imports. (a) Quantity not available.

The values of the net exports for the same five years are furnished in the next table, and amount to no less a total than £271,216,045 for the period, or an average of £54,243,209 per annum, of which wool represents 70 per cent. Meats, skins, and tallow rank next in order of importance.

NET EXPORTS OF PASTORAL PRODUCTS.—AUSTRALIA, 1917-18 TO 1921-22.

Products.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
VALUES.					
Animals (living)—	£	£	£	£	£
Cattle	-10,993	3,567	-23,855	30,350	53,274
Horses	453,616	161,533	117,739	137,497	-1,148
Sheep	15,049	35,007	57,854	140,975	36,921
Bones	21,806	27,156	31,534	21,839	19,610
Glue Pieces and Sinews	15,196	6,904	15,340	302	7,883
Glycerine	41,256	58,073	1,351	-30,374	1,516
Hair	21,243	29,335	66,943	28,416	6,736
Hoofs	7,848	11,091	14,526	8,180	7,120
Horns	13,309	18,474	52,383	29,609	34,418
Meats—					
Frozen Beef	3,697,957	2,471,136	2,474,904	3,819,094	1,867,681
Frozen Mutton and Lamb	452,627	1,298,086	5,482,263	1,578,634	2,139,537
Frozen Rabbits and Hares	985,190	308,965	762,936	432,745	407,143
Frozen, Other	199,847	381,780	305,948	190,975	128,451
Potted and Extract of	224,464	328,233	99,599	9,649	-49,636
Preserved in Tins, etc.	2,308,989	3,771,373	2,778,503	380,694	324,275
Other (excluding Bacon and Ham)	7,655	15,380	37,845	16,741	10,852
Sausage Casings	-29,089	101,490	212,427	-43,160	128,127
Skins—					
Hides	211,449	156,084	1,089,731	-113,202	122,471
Sheep	808,782	1,921,411	2,585,171	1,228,012	1,305,223
Rabbit and Hare	1,155,824	1,314,366	3,670,791	968,972	784,346
Other (including Undressed Furs)	276,537	313,472	2,268,748	715,656	288,633
Tallow	886,128	2,167,728	2,855,602	1,347,400	1,440,683
Wool—					
Greasy	16,981,347	31,477,707	38,414,608	25,298,176	38,970,130
Scoured	6,094,040	10,351,553	9,169,288	6,426,167	7,795,146
Tops	1,510,799	935,212	2,957,679	2,049,588	1,207,048
Total Values	36,350,876	57,665,116	75,499,858	44,663,755	57,036,440

NOTE.—The minus — sign signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognized. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages are utilized to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages, the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes. During the recent war Australian horses were found to be well adapted for all purposes, especially in Palestine.

2. **Distribution throughout Australia.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it retained till the year 1914, when it gave place to Queensland, where rapid progress had been in evidence during the previous decade. New South Wales regained the lead during the next three seasons, but Queensland again replaced the latter State in 1918, and has strengthened its position during the past three seasons. Particulars for the several States during the past five years are as follows:—

HORSES—NUMBER, 1917 TO 1921.

Year.	N.S.W. (b)	Vic. (a)	Q'land.	S. Aust. (b)	W. Aust.	Tas. (a)	N.T.	F.C.T. (b)	Total.
1917	740,806	514,061	731,977	262,840	178,151	42,396	26,231	1,441	2,497,903
1918	721,302	523,788	758,632	269,255	180,094	41,221	31,436	1,421	2,527,149
1919	660,751	513,500	730,326	264,901	174,919	39,452	35,839	1,513	2,421,201
1920	661,846	487,503	741,024	268,187	178,664	39,117	37,837	1,332	2,415,510
1921	668,501	496,124	746,281	267,639	180,334	38,439	39,565	1,299	2,438,182

(a) 1st March year following.

(b) 30th June year following.

The number of horses in Australia from 1860 onwards, may be ascertained from the graph hereinafter.

3. **Proportions in the Several States and Territories.**—The percentages of the number of horses in the several States and Territories on the total for Australia for the past five years are as follows:—

HORSES.—PERCENTAGE IN EACH STATE, 1917 TO 1921.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.C.T.	Total.
	%	%	%	%	%	%	%	%	%
1917 ..	29.64	20.57	29.33	10.52	7.13	1.70	1.05	0.06	100.00
1918 ..	28.53	20.72	30.05	10.65	7.12	1.63	1.24	0.06	100.00
1919 ..	27.29	21.21	30.16	10.94	7.23	1.63	1.48	0.06	100.00
1920 ..	27.40	20.18	30.68	11.10	7.40	1.62	1.57	0.05	100.00
1921 ..	27.42	20.35	30.61	10.98	7.40	1.57	1.62	0.05	100.00

The relative changes in distribution are insignificant, the only alteration during the last five years being a decrease of 2.22 per cent. in New South Wales, occasioned by slight increases in Queensland, South Australia, Western Australia and Tasmania.

4. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of Australia. Queensland is next in order, while Tasmania has the smallest number of

horses per head. The number of horses per head of population has declined in all the States since 1917. Particulars for the past five years are as follows:—

HORSES.—NUMBER PER HEAD OF POPULATION, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	All States.
1917 ..	0.38	0.36	1.06	0.58	0.58	0.21	5.46	0.58	0.50
1918 ..	0.36	0.36	1.08	0.57	0.58	0.20	6.78	0.60	0.49
1919 ..	0.32	0.34	0.99	0.54	0.53	0.19	7.88	0.68	0.45
1920 ..	0.31	0.32	0.99	0.54	0.54	0.18	9.48	0.52	0.44
1921 ..	0.31	0.32	0.97	0.53	0.54	0.18	10.59	0.45	0.44

5. **Comparison with other Countries.**—The number of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

HORSES.—NUMBER IN PRINCIPAL COUNTRIES.

Country.	Date.	Number of Horses (,000 omitted.)	Country.	Date.	Number of Horses (,000 omitted.)
Russia (a) ..	1920	24,622	Sweden	1919	716
U.S. of America ..	1922	20,559	Union of South Africa	1920	690
Argentine Republic ..	1920	9,293	Turkey	1919	630
Brazil	1916	6,065	Denmark	1921	598
China	1916	4,401	Czecho-Slovakia ..	1920	581
Canada	1921	3,814	Uruguay	1916	555
Germany	1922	3,648	Colombia	1915	526
Poland	1921	3,187	Paraguay	1918	490
France	1921	2,706	Chile	1919	392
Australia	1921	2,433	Netherlands	1921	364
United Kingdom ..	1921	2,165	New Zealand	1922	332
British India	1920	1,699	Latvia	1922	303
Rumania	1921	1,687	Austria	1918	297
Japan	1919	1,480	India (Native States)	1920	277
Jugo-Slavia	1921	1,059	Finland	1919	273
Italy	1918	990	Java	1918	270
Mexico	1920	929	Philippine Islands	1919	255
Cuba	1921	859	Belgium	1922	230
Spain	1921	722	Norway	1918	221
Hungary	1920	718	Greece	1920	201

(a) Including Caucasus and Siberia.

6. **Oversea Trade in Horses.**—(i) *Exports.* Australia's export trade in horses is fairly considerable, though somewhat fluctuating. During the past five years it has varied in number between 24,172 in 1917-18 and 2,075 in 1921-22, and in value between £502,557 in the former and £68,234 during the latter year. The total number of horses exported during the five years amounted to 49,320, valued at £1,213,905, or equal to an annual average of 9,864 for £242,781. The average export price for the period was £24 12s. 3d. More than 88 per cent. of the horses exported went to India, where they are largely used for remount purposes.

(ii) *Imports.* The number of horses imported into Australia is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, principally from the United Kingdom and New Zealand. The average value per head of the horses imported during the last five years was £250 3s. 5d., as compared with £24 12s. 3d. per head for the exports for the same period. The average number imported per annum was, however, only 196, and the average annual value, £48,934. The following table gives the imports, exports, and net exports of horses during each of the years from 1917-18 to 1921-22:—

HORSES.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1917-18	296	48,941	24,172	502,557	23,876	453,616
1918-19	146	27,821	8,832	189,354	8,686	161,533
1919-20	152	49,078	5,939	166,817	5,787	117,739
1920-21	107	49,446	8,302	186,943	8,195	137,497
1921-22	277	69,382	2,075	68,234	1,798	- 1,148

NOTE.—The minus sign — signifies net imports.

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States, cattle-raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry led to a considerable increase in numbers and improvement in quality of the dairy herds of Victoria, New South Wales, and Southern Queensland in particular, the portion of Australia in the temperate zone being the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts, *i.e.*, in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Australia.**—Until 1880 New South Wales occupied the leading position as a cattle-raising State, but in that year Queensland took first place, which it has since maintained. The graph herewith shows a rapid increase in the number of cattle in Australia up to the year 1894, when 12,311,617 head were depastured. From 1895 onwards, however, the effects of droughts and the ravages of tick fever reduced the number to 7,062,742 in 1902. Following the disastrous drought which terminated in the latter year, the herds were gradually built up, and despite recurring droughts, they continued to increase in recent years until the maximum number of 14,441,309 cattle was attained in 1921.

The numbers of cattle in the several States and Territories during each of the last five years are as follows:—

CATTLE.—NUMBER, 1917 TO 1921.

Year.	N.S.W. (b)	Victoria. (a)	Q'land.	S. Aust. (b)	W. Aust.	Tas. (a)	Nor. Ter.	Fed. Cap. Ter. (b)	Total.
1917	3,148,309	1,371,049	5,316,558	313,245	927,086	197,938	541,545	13,408	11,829,138
1918	3,271,782	1,596,544	5,786,744	342,768	943,847	218,234	570,039	8,894	12,738,852
1919	3,075,954	1,631,120	5,940,433	349,562	880,644	214,442	610,534	8,378	12,711,067
1920	3,367,880	1,575,159	6,455,067	376,399	849,803	208,202	659,840	7,387	13,499,737
1921	3,538,240	1,750,369	7,047,370	419,197	893,108	216,704	568,031	8,290	14,441,309

(a) 1st March year following.

(b) 30th June year following.

3. **Proportion in each State.**—Percentages showing the relative importance of the various cattle-breeding States during the years 1917 to 1921 are given hereunder:—

CATTLE.—PERCENTAGE IN EACH STATE, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Total.
	%	%	%	%	%	%	%	%	%
1917 ..	26.62	11.59	44.94	2.65	7.84	1.67	4.58	0.11	100.00
1918 ..	25.68	12.53	45.43	2.69	7.41	1.71	4.48	0.07	100.00
1919 ..	24.20	12.83	46.73	2.75	6.93	1.69	4.80	0.07	100.00
1920 ..	24.95	11.67	47.82	2.79	6.29	1.54	4.89	0.05	100.00
1921 ..	24.50	12.12	48.80	2.90	6.19	1.50	3.93	0.06	100.00

Queensland contains within its borders nearly one half of the cattle-herds of Australia. During the past five years substantial gains in numbers have increased its percentage to 48.80, or 4 per cent. more than in 1917. This increase has been won mainly at the expense of the next most important State, New South Wales, where, although considerable additions have been made, the rate of increase has not been as high as in the northern State.

4. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, as may be seen from the following table :—

CATTLE.—NUMBER PER HEAD OF POPULATION, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	All States.
1917 ..	1.62	0.97	7.73	0.70	3.02	1.00	112.75	5.42	2.36
1918 ..	1.64	1.11	8.20	0.73	3.05	1.08	122.85	3.77	2.48
1919 ..	1.49	1.09	8.05	0.72	2.69	1.02	134.27	3.77	2.38
1920 ..	1.60	1.03	8.58	0.76	2.57	0.98	165.29	2.86	2.49
1921 ..	1.65	1.12	9.15	0.83	2.66	0.99	152.00	2.84	2.61

A satisfactory increase in the ratio of cattle to population has taken place in Australia since 1917, all the cattle-rearing States, with the exception of Western Australia, contributing to this favourable position.

5. **Comparison with other Countries.**—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

CATTLE.—NUMBER IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle (,000 omitted.)	Country.	Date.	No. of Cattle (,000 omitted.)
British India (a) ..	1920	127,119	Java	1918	3,040
U.S. of America ..	1922	66,352	Colombia	1915	3,035
Russia (b)	1920	37,873	Siam	1922	2,864
Brazil	1916	28,926	Denmark	1921	2,591
Argentine Republic ..	1920	27,392	Kenya Colony ..	1920	2,570
India (Native States)(a)	1920	16,400	Sweden	1919	2,551
Germany	1922	16,309	Chile	1919	2,163
China	1916	15,973	Mexico	1920	2,163
Australia	1921	14,530	Hungary	1920	2,148
France	1921	13,343	Austria	1920	2,114
United Kingdom ..	1921	11,893	Venezuela	1920	2,078
Canada	1921	10,206	Netherlands ..	1921	2,063
Union of South Africa	1921	8,557	Rhodesia	1921	1,763
Poland	1921	7,861	Ceylon	1919	1,599
Uruguay	1916	7,802	Belgium	1922	1,517
Madagascar	1921	7,829	Korea	1920	1,490
Italy	1918	6,240	Indo-China	1916	1,448
Rumania	1921	5,521	Switzerland ..	1921	1,425
Paraguay	1918	5,500	Japan	1919	1,345
Jugo-Slavia	1921	4,834	Western Morocco ..	1921	1,300
Cuba	1921	4,771	Upper Senegal & Niger	1918	1,299
Czecho-Slovakia ..	1920	4,212	Italian Somaliland ..	1920	1,246
Tanganyika Territory ..	1912	3,994	Finland	1920	1,812
Turkey	1919	3,740	Norway	1918	1,050
Spain	1921	3,718	French Sudan ..	1921	1,025
New Zealand	1922	3,323	Algeria	1915	1,022
French West Africa ..	1921	3,313	Peru	1917	1,000

(a) Including buffalo calves.

(b) Including Caucasus and Siberia.

6. Imports and Exports of Cattle.—Although the various products of the cattle-raising industry bulk largely in the export trade of Australia, the export of live cattle has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. Details are as follows:—

CATTLE.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1917-18 ..	222	23,570	1,339	12,577	1,117	- 10,993
1918-19 ..	66	3,373	710	6,940	644	3,567
1919-20 ..	337	55,656	3,470	31,801	3,133	- 23,855
1920-21 ..	127	10,979	4,523	41,329	4,396	30,350
1921-22 ..	108	10,769	9,218	64,043	9,110	53,274

NOTE.—The minus sign - signifies net imports.

The average value of the cattle imported during the last five years was £121 6s. 8d. per head, while the average value of the cattle exported during the same period was £8 2s. 9d. As stated previously, the imported cattle were required principally for stud purposes.

7. Cattle Slaughtered.—The number of cattle slaughtered during each of the years 1917 to 1921 is given hereunder:—

CATTLE (INCLUDING CALVES) SLAUGHTERED, 1917 TO 1921.

Year.	N.S.W. (a)	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter. (a)	Total.
1917	377,936	217,480	582,954	69,789	50,781	23,521	22,911	87	1,345,459
1918	437,046	223,340	498,737	73,148	48,707	22,419	31,511	141	1,335,049
1919	593,859	362,475	461,197	85,978	55,056	15,753	23,286	138	1,597,742
1920	525,981	374,545	449,103	90,944	68,055	27,468	1,330	74	1,537,500
1921	631,699	331,707	499,992	95,323	54,640	33,566	2,445	90	1,649,462

(a) For year ended 30th June of year following.

8. Production and Consumption of Beef.—The production of beef in Australia during the years 1914-15 to 1920-1921 was calculated at 764,489,000 lbs. per annum. Of this quantity, local requirements absorbed 558,487,000 lbs., or more than 73 per cent., leaving a balance of about 27 per cent., which was exported as frozen and canned beef. The annual consumption of beef per head of population in Australia averaged 109.68 lbs. compared with 79.85 lbs. in the United States of America, and 58.30 lbs. in the United Kingdom.

9. Export of Beef Preserved by Cold Process.—A large export trade in beef preserved by cold process is carried on by Australia in normal times, mainly with the United Kingdom, Egypt, and the Philippine Islands. The quantities so exported during the five years 1917-18 to 1921-22 were as follows:—

BEEF PRESERVED BY COLD PROCESS.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
QUANTITY.						
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	145,300,631	47,056,554	105,725,679	156,316,163	108,671,867	563,076,894
Egypt ..	30,359,072	68,681,034	6,616,637	10,202,633	1,904,187	117,763,563
Philippine Islands ..	1,368,713	1,994,336	2,928,722	2,479,724	8,093,851	16,865,346
Straits Settlements ..	1,535,005	1,480,201	2,366,035	3,305,162	2,392,991	11,079,394
Hawaiian Islands ..	502,067	489,640	2,104,769	2,437,135	554,698	6,088,309
Italy ..	..	..	..	3,096,341	..	3,096,341
Hong Kong ..	98,058	75,791	467,974	849,904	610,785	2,102,512
Ceylon ..	203,823	60,854	405,347	530,636	322,010	1,522,670
United States ..	..	40,086	301,673	133,304	71,615	546,678
Other Countries ..	881,932	111,021	162,075	291,477	1,545,349	2,991,854
Total ..	180,249,301	119,989,517	121,078,911	179,642,479	124,167,353	725,127,561

BEEF PRESERVED BY COLD PROCESS.—EXPORTS, AUSTRALIA—*continued.*

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
VALUE.						
United Kingdom ..	£ 2,976,301	£ 958,164	£ 2,130,527	£ 3,302,283	£ 1,616,075	£ 10,983,350
Egypt ..	616,627	1,415,713	133,583	207,643	24,431	2,397,997
Philippine Islands ..	31,449	44,225	65,331	56,032	133,696	330,733
Straits Settlements ..	31,819	33,284	53,363	71,099	44,687	234,252
Hawaiian Islands ..	17,968	14,058	62,818	77,784	7,280	179,908
Italy ..	..	..	..	62,575	..	62,575
Hong Kong ..	2,032	1,704	10,426	18,553	11,117	43,832
Ceylon ..	4,582	2,130	11,539	13,478	6,111	37,840
United States ..	..	1,023	7,422	3,429	1,130	13,004
Other Countries ..	17,915	2,485	4,239	6,965	23,400	55,004
Total ..	3,698,693	2,472,786	2,479,248	3,819,841	1,867,927	14,338,495

During the five years under review the United Kingdom has been Australia's largest customer for frozen beef and has taken more than 76 per cent. of the total shipments. Egypt, the Philippine Islands and Straits Settlements ranked next in order of importance. The exporting States during 1921-22 were:—Queensland, 108,336,879 lbs., valued at £1,634,227; New South Wales, 10,704,871 lbs., valued at £153,338; Western Australia, 2,478,848 lbs., valued at £39,400; Victoria, 2,033,517 lbs., valued at £33,046; and South Australia, 613,238 lbs., valued at £7,916.

10. *Beef Subsidy.*—The prices for frozen beef ruling in England early in 1922 were so low that it became unprofitable to export Australian beef. A succession of good seasons had stocked the country to capacity, and the failure of the export treatment works to absorb the surplus greatly depressed the beef industry. In order to assist cattle growers the Commonwealth Government passed the Meat Export Bounties Act in September, 1922, which provided for the payment of a subsidy of $\frac{1}{4}$ d. per lb. on all frozen or canned beef exported or placed in cool stores for export, and 10s. per head on live cattle exported for slaughter, from April to December, 1922. The granting of the subsidy was made conditional on reductions of $\frac{1}{8}$ d. per lb. being effected in both the cost of treating and of shipping the meat. While the amount of the bounty was small, it gave an acceptable measure of relief to the cattle industry. Many of the works were able to operate, and more than 200,000 head of cattle were treated which would otherwise have remained to accentuate the existing depression. The bounty paid during the year amounted to £117,245 17s. 5d. for frozen beef, and £4,521 10s. 0d. for live cattle. The condition of the beef industry is still unsatisfactory, and the Government has renewed the bounty for the 1923 season on the same basis as in 1922.

§ 4. Sheep.

1. *Initiation of the Pastoral Industry.*—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. *Distribution throughout Australia.*—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained the lead in sheep-raising which naturally attached to it as the portion of Australia in which settlement was first effected. From 1878 to 1901, the number of sheep in New South Wales represented more than half the total for Australia, but in recent years the proportion has fallen away considerably.

The extensive losses of sheep in Australia caused by droughts may be seen from the graph accompanying this chapter.

Four marked periods of decline greatly reduced the numbers at successive intervals, but these losses were quickly regained, and by a corresponding series of increases the flocks were soon re-established, the number during 1921 amounting to over 82,000,000.

In 1891 the number reached its maximum, viz., 106,421,068. There has been no approach to that number in recent years, but it has been considered that the flocks in 1891 were in excess of the reasonable sheep-carrying capacity of the country. The rapid growth of the frozen mutton and lamb industry precludes the building up of Australia's flocks to such large dimensions as heretofore, and it appears unlikely that the 1891 figures will be approached in the immediate future.

The number of sheep in the several States and Territories for each year from 1917 to 1921 was as follows:—

SHEEP.—NUMBER, 1917 TO 1921.

Year.	New South Wales. (b)	Victoria. (a)	Queensland.	South Australia. (b)	Western Australia.	Tasmania. (a)	Nor. Ter.	Fed. Cap. Ter. (b)	Total.
1917	38,482,465	14,760,013	17,204,268	6,229,519	6,384,191	1,711,116	54,709	138,731	84,965,012
1918	37,243,770	15,773,902	18,220,985	6,625,184	7,183,747	1,841,924	58,620	138,104	87,086,236
1919	29,077,514	14,422,745	17,379,332	6,014,565	6,697,951	1,781,425	8,811	171,739	75,554,082
1920	33,691,838	12,171,084	17,404,840	6,359,944	6,532,965	1,570,832	6,062	159,990	77,897,555
1921	37,025,716	12,325,818	18,402,399	6,257,052	6,506,177	1,551,273	6,349	151,686	82,226,470

(a) 1st March, year following.

(b) 30th June, year following.

During the year 1919 the Avon Downs Pastoral Company in the Northern Territory disposed of the whole of their flock numbering about 50,000, and this property is now stocked with cattle only.

3. Proportion in the Several States and Territories.—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1917 to 1921 are given hereunder:—

SHEEP.—PERCENTAGE IN EACH STATE, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Total.
	%	%	%	%	%	%	%	%	%
1917	45.29	17.37	20.25	7.33	7.52	2.01	0.07	0.16	100.00
1918	42.77	18.11	20.92	7.61	8.25	2.11	0.07	0.16	100.00
1919	38.49	19.09	23.00	7.96	8.86	2.36	0.01	0.23	100.00
1920	43.25	15.62	22.34	8.16	8.39	2.02	0.01	0.21	100.00
1921	45.03	14.99	22.38	7.61	7.91	1.89	0.01	0.18	100.00

4. Relation to Population.—The relation of the flocks of the several States and Territories to the population at the end of each year from 1917 to 1921 is as follows:—

SHEEP.—NUMBER PER HEAD OF POPULATION, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	All States.
1917	19.83	10.41	25.02	13.82	20.83	8.64	11.39	56.10	16.97
1918	18.66	10.97	25.83	14.14	23.19	9.08	12.63	58.59	16.99
1919	14.07	9.59	23.56	12.36	20.46	8.48	1.94	77.29	14.15
1920	16.03	7.96	23.14	12.78	19.75	7.38	1.52	62.04	14.35
1921	17.24	7.95	23.90	12.39	19.41	7.10	1.70	52.05	14.86

The ratio to population has decreased by more than two sheep per head since 1917. This, decline, however, is temporary, and has been caused by the losses during the drought in 1919 and the earlier part of 1920.

Apart from the effect of drought the percentage of sheep depastured in the different States changes little. The only noteworthy alteration was a loss of 2.38 per cent. in Victoria, as the result of a decrease of 2,434,195 sheep in that State since 1917.

5. Comparison with other Countries.—As regards the size of its flocks, and the quantity and quality of wool produced, Australia has long occupied a leading position amongst the sheep-raising countries of the world. From estimates published in the Year Book of the International Institute of Agriculture it would appear that the approximate number of sheep in the world is in the neighbourhood of 550,000,000, to which total Australia contributes about 15 per cent. The following comparison taken mainly from

the same source gives the latest available figures relative to the number of sheep in the principal wool-producing countries:—

SHEEP.—NUMBER IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep (,000 omitted).	Country.	Date.	No. of Sheep (,000 omitted).
Australia	1921	82,226	Tanganyika Territory(b)	1912	6,440
Russia (a)	1920	50,543	French West Africa	1921	5,864
Argentine Republic ..	1920	45,309	Greece	1920	5,811
U.S. of America ..	1922	37,209	Germany	1922	5,566
Union of South Africa	1921	31,718	Chile	1919	4,500
United Kingdom ..	1921	24,274	Portugal	1920	3,851
China	1916	22,232	Canada	1921	3,676
New Zealand	1922	22,222	Kenya Colony ..	1920	2,583
British India	1920	21,984	Upper Senegal & Niger	1918	2,161
Spain	1921	20,522	Poland	1921	2,093
Italy	1918	11,754	Tunis	1921	2,038
Uruguay	1916	11,473	French Sudan ..	1921	2,030
Turkey	1919	11,200	Hungary	1920	1,817
Rumania	1921	11,194	Italian Somaliland	1920	1,666
France	1921	9,600	Sweden	1919	1,564
Algeria	1915	8,941	Bolivia	1910	1,449
Bulgaria	1910	8,669	Basutoland ..	1911	1,369
India (Native States)	1920	8,188	Norway	1918	1,208
Brazil	1916	7,205	Latvia	1922	1,162
Peru	1917	6,900	Mexico	1920	1,090
Jugo-Slavia	1921	6,773	Finland	1920	1,032
French Morocco ..	1920	6,710	French Equatorial Africa	1918	1,000

(a) Including Caucasus and Siberia.

(b) Including goats.

6. Oversea Imports and Exports of Sheep.—As in the case of cattle, the overseas exports of live sheep from Australia are of comparatively small importance. During the past five years the principal consignments of ordinary sheep have been made to the Straits Settlements from the State of Western Australia. The purchases by South African and Japanese buyers at the Australian Stud Sheep Sales during recent years have opened up a regular export trade with these two countries in stud sheep, the bulk of which have been secured from the leading flocks of New South Wales, Victoria and South Australia. The following are particulars of the imports and exports for the years 1917-18 to 1921-22:—

SHEEP.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1917-18 ..	1,719	9,850	10,799	24,899	9,080	15,049
1918-19 ..	607	4,776	18,608	39,783	18,001	35,007
1919-20 ..	269	6,258	21,870	64,112	21,601	57,854
1920-21 ..	3,038	8,828	22,345	149,803	19,307	140,975
1921-22 ..	345	4,836	36,456	41,757	36,111	36,921

7. Sheep Slaughtered.—The number of sheep slaughtered in the several States during each of the years from 1917 to 1921 was as follows:—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1917 TO 1921.

Year.	N.S.W. (b)	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tas. (a)	Nor. Ter.	Fed. Cap. Ter.(b)	Total.
1917 ..	3,198,465	2,499,002	689,905	808,914	590,244	259,287	c500	3,713	8,050,030
1918 ..	4,271,396	3,581,460	542,479	1,137,578	630,117	295,844	c500	3,334	10,462,708
1919 ..	5,533,484	6,324,490	717,191	1,478,557	800,252	330,000	c100	3,800	15,187,874
1920 ..	3,847,498	4,244,798	461,449	1,058,977	839,963	387,346	c100	3,765	10,843,896
1921 ..	5,225,617	4,005,587	769,360	1,208,347	871,831	362,871	30	3,333	12,446,976

(a) Partly estimated.

(b) Year ended 30th June year following.

(c) Estimated.

8. **Production and Consumption of Mutton and Lamb.**—The annual production of mutton and lamb during the past seven years averaged 469,056,000 lbs., of which 362,881,000 lbs., or 77.4 per cent., was consumed locally, the balance of 22.6 per cent. being exported. The consumption of mutton and lamb in Australia during the period amounted to 69.47 lbs. per head per annum, which is considerably in excess of the 26.65 lbs. and the 6.00 lbs. per head per annum consumed in the United Kingdom and the United States of America respectively.

9. **Exports of Mutton and Lamb Preserved by Cold Process.**—The export trade in mutton and lamb preserved by cold process grew rapidly until in 1913, the year immediately before the war, the value of the shipments amounted to nearly £3,000,000. The exports fell off considerably during the war years, but the release of shipping space and high prices in England were responsible for the record shipment of 246,971,346 lbs., valued at £5,482,564 in 1919–20. The dearth of supplies consequent upon the drought greatly reduced the consignments in 1920–21, but the trade expanded in 1921–22, and from figures already available the volume of the exports in 1922–23 will nearly double those of 1921–22. Considerable attention is paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds have proved exceedingly valuable, as they furnish both a good quality of wool and an excellent carcass for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs, as it has become widely recognized that with suitable breeds the export trade in lambs is very profitable.

As in the case of frozen beef, the principal customer in this trade is the United Kingdom, which has absorbed 92 per cent. of the total quantity exported from Australia during the last five years, while the balance was shipped mainly to Egypt, the Straits Settlements, and Sweden.

MUTTON AND LAMB PRESERVED BY COLD PROCESS.—EXPORTS, AUSTRALIA, 1917–18 TO 1921–22.

Country to which Exported.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.	Total for 5 years.
QUANTITY.						
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ..	9,532,577	49,784,705	239,154,276	47,792,058	88,631,613	434,895,229
Egypt ..	8,071,709	8,464,515	..	2,744,246	178,380	19,458,850
Straits Settlements ..	824,406	754,089	1,102,658	1,228,087	1,089,985	4,999,225
Sweden ..	..	..	2,119,602	1,217,551	..	3,337,153
Ceylon ..	252,716	189,875	383,518	398,214	396,880	1,621,203
Hong Kong ..	144,789	195,881	376,315	410,329	391,166	1,518,480
Union of South Africa ..	..	..	1,578,839	193,709	72,920	1,845,468
Philippine Islands ..	122,963	194,843	595,312	237,264	289,294	1,439,676
Canada ..	199,092	..	273,047	37,427	329,030	838,596
United States ..	..	..	148,304	124,535	..	272,839
Other Countries ..	27,058	103,547	1,239,475	510,401	335,731	2,216,212
Total ..	19,175,310	59,687,455	246,971,346	54,893,821	91,714,999	472,442,931
VALUE.						
	£	£	£	£	£	£
United Kingdom ..	213,710	1,082,646	5,292,542	1,393,179	2,073,276	10,055,353
Egypt ..	194,199	176,551	..	64,409	3,514	438,673
Straits Settlements ..	23,885	20,796	30,599	36,980	24,750	137,010
Sweden ..	..	..	49,303	29,805	..	79,108
Ceylon ..	7,103	5,058	10,401	11,784	7,781	42,127
Hong Kong ..	4,072	5,399	10,201	12,352	8,690	40,714
Union of South Africa ..	..	..	34,788	4,535	1,029	40,352
Philippine Islands ..	3,425	5,395	14,709	6,595	6,347	36,471
Canada ..	5,471	..	8,675	955	7,422	22,523
United States ..	..	..	3,603	4,684	..	8,287
Other Countries ..	782	2,586	27,743	13,380	6,806	51,297
Total ..	452,647	1,298,431	5,482,564	1,578,658	2,139,615	10,951,915

§ 5. Wool.

1. **Importance of Wool Production.**—Wool is the chief factor in the pastoral wealth of Australia, the value of the output for the season ended 30th June, 1922, being about £34,570,000. The bulk of the production is exported, but with the greater activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents only about 9 per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—For the purpose of comparing the clips as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The quantity of Australian wool scoured and washed before export during recent years has been on the average about 20 per cent. of the total clip. The loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than vice versa, since the absolute error arising from uncertainty as to average loss of weight is thereby minimized.

In the tables dealing with production "scoured and washed" wool has been converted into the estimated equivalent amount of "greasy" on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed."

3. **Production.**—(i) *Total.* The estimated production of wool in the several States, formerly based on the Customs returns, being no longer available from that source, an effort has been made to arrive at approximate figures from data collected by the State Statisticians from growers, fellmongers, etc. Particulars for years prior to 1917-18 will be found in earlier issues of the Year Book. The following table gives the estimates obtained for the five seasons ended 30th June, 1918 to 1922 :—

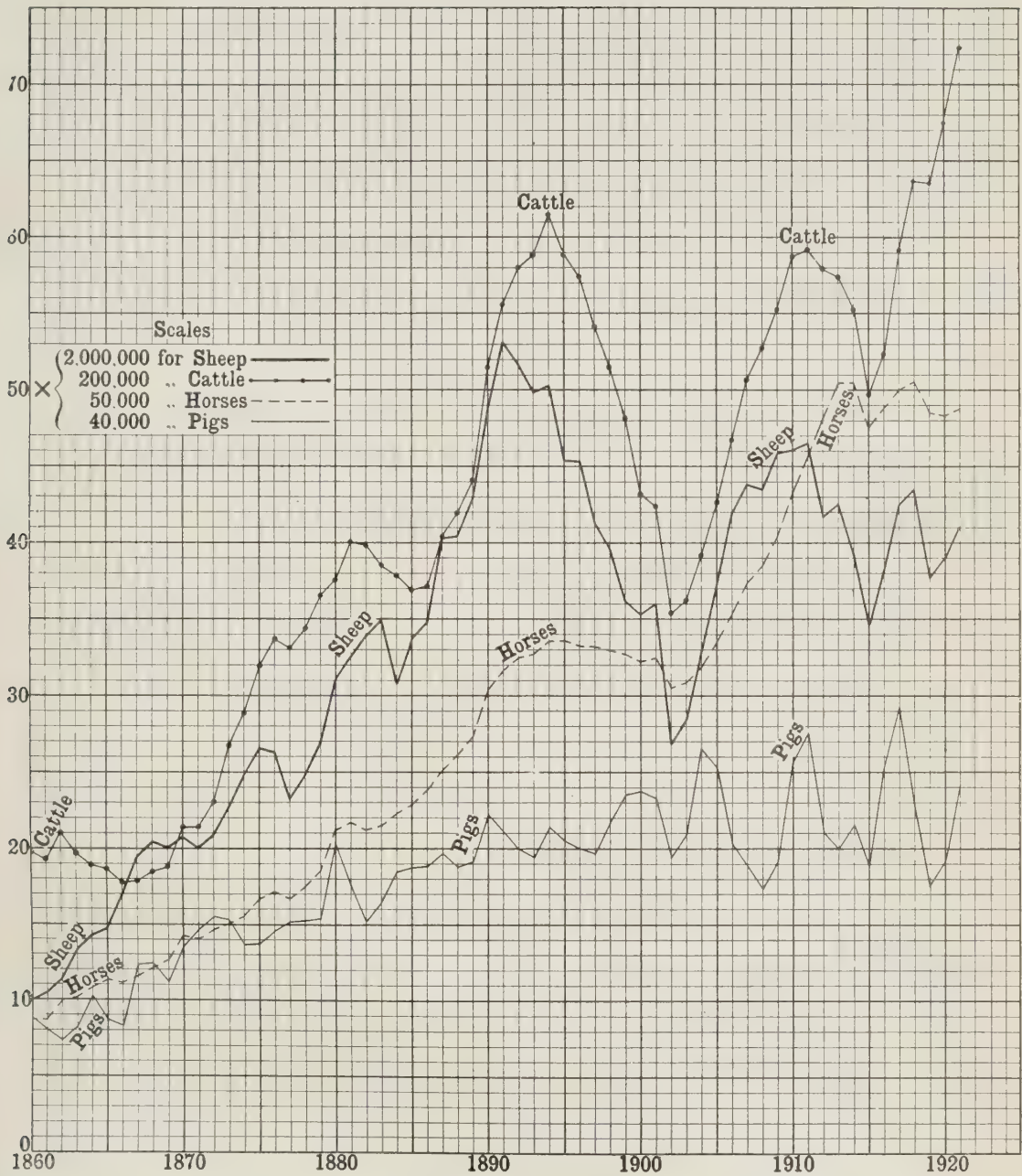
WOOL.—TOTAL PRODUCTION, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales (a)	284,188,000	305,613,000	296,641,000	240,231,000	285,418,000
Victoria ..	105,424,682	126,647,061	132,847,167	90,250,571	103,512,777
Queensland ..	87,425,558	113,777,272	118,035,461	114,809,963	132,579,733
South Australia ..	46,339,339	55,947,108	58,306,918	48,953,503	54,038,262
Western Australia ..	39,701,357	45,317,271	46,299,381	43,714,630	46,301,039
Tasmania ..	9,927,044	10,279,998	11,069,237	9,503,048	9,634,624
Northern Territory (b)	330,000	330,000	50,000	40,000	30,000
Total ..	573,335,980	657,911,710	663,249,164	547,502,715	631,514,435

(a) Including Federal Territory. (b) Approximate figures.

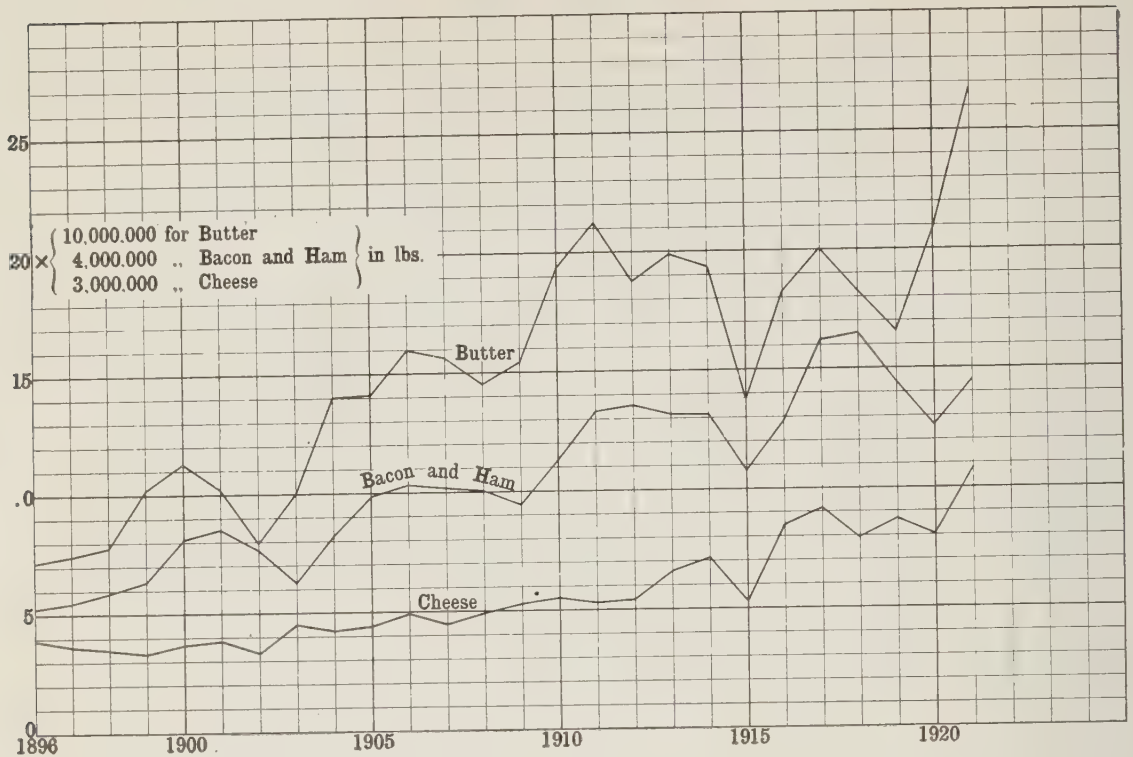
In connexion with the figures obtained by the State Statisticians, a slight deficiency is apparent when comparisons have been made with totals obtained from oversea shipments plus local consumption, or with the returns published by the Central Wool Committee. The extent of the discrepancy in recent years cannot be estimated until the stocks of carry-over wool are despatched from Australia.

NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS—AUSTRALIA, 1860 TO 1921.



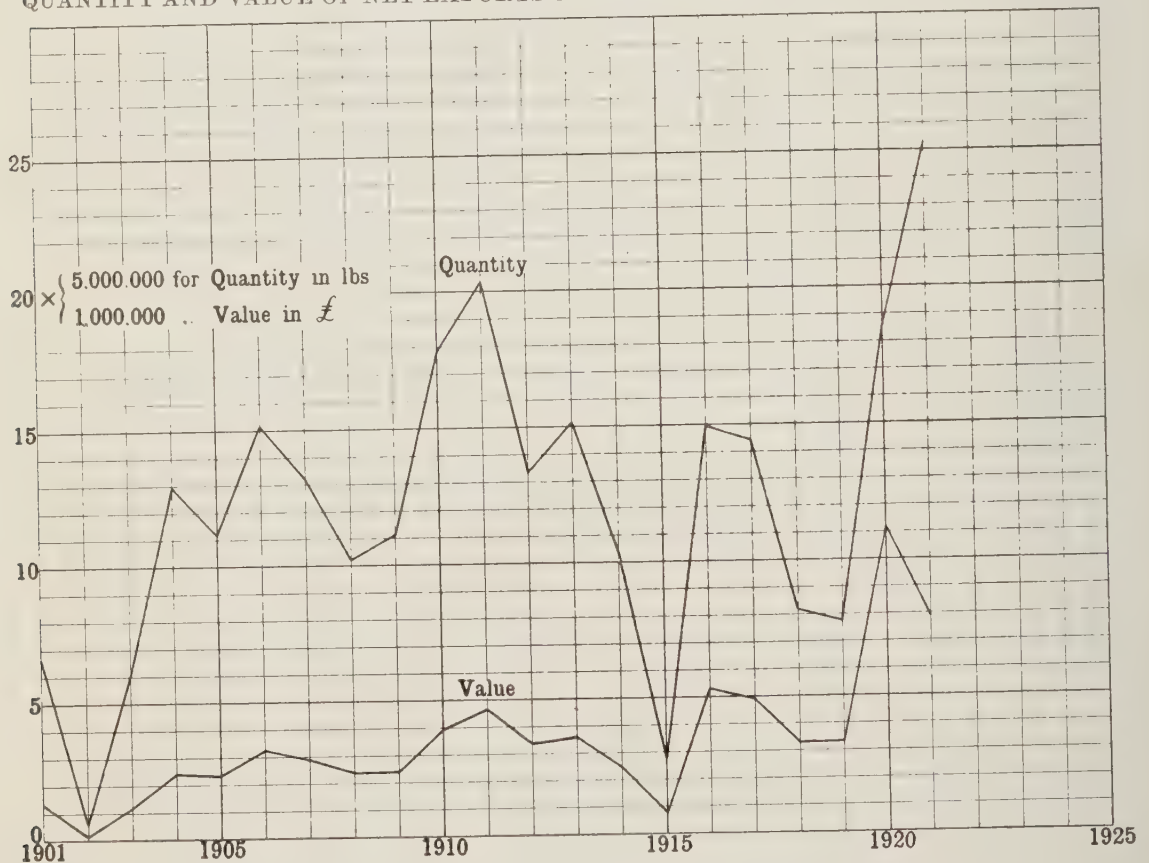
EXPLANATION.—The base of each small square represents an interval of one year, and the vertical side 2,000,000 in the case of sheep, 200,000 for cattle, 50,000 for horses, 40,000 for pigs.

PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM—AUSTRALIA,
1896 TO 1921.



EXPLANATION.—The base of each small rectangle represents an interval of one year, and the vertical height of each denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM AUSTRALIA, 1900 TO 1921.



EXPLANATION.—The base of each small rectangle represents an interval of one year, and the vertical height of each 5,000,000 lbs. in weight, or £1,000,000 in value.

(ii) *Weight and Value per Sheep Shorn.* The weight and value of wool per sheep shorn in the past five seasons is shown in the following table :—

WOOL.—WEIGHT AND VALUE PER SHEEP SHORN, 1917-18 TO 1921-22.

Season ended 30th June.			N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
WEIGHT.									
			lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1918	..	..	7.08	6.19	6.91	7.52	6.17	5.38	6.80
1919	..	..	7.13	6.21	6.30	7.41	6.09	5.09	6.68
1920	..	..	7.03	6.38	6.59	7.89	5.71	5.32	6.73
1921	..	..	6.93	5.77	7.03	7.56	5.76	5.19	6.65
1922	..	..	7.49	6.23	7.57	7.70	6.19	5.77	7.18
VALUE.									
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1918	..	..	8 9	8 6	9 7	9 1	7 11	8 5	8 9
1919	..	..	8 11	8 3	8 10	9 0	7 4	7 9	8 7
1920	..	..	8 10	8 4	9 3	9 3	7 1	8 3	8 9
1921	..	..	7 11	7 10	8 9	8 6	6 3	7 3	8 0
1922	..	..	8 1	6 11	8 11	7 8	6 5	6 8	7 10

4. Care Needed in Comparing Clips.—In comparing successive clips allowance must be made for the circumstance that owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth.

5. World's Wool Production.—The following table compiled by the Textile Division of the United States Department of Commerce shows the importance of Australia as a wool-producing country. Out of a total production of 2,697,192,000 lbs. in 1922 Australia's contribution amounted to 631,514,000 lbs., or nearly one quarter of the world's supply.

WOOL(a).—WORLD PRODUCTION, 1921 AND 1922.

Countries.			Average Annual Pre-War Production.(b)	Production.	
				1921.	1922.(c)
			lbs.	lbs.	lbs.
North America—					
United States	..	..	314,110,000	273,064,000	261,095,000
Canada	..	..	11,210,000	21,251,000	19,125,000
Mexico	..	..	7,000,000	750,000	792,000
Total	..	..	332,320,000	295,065,000	281,012,000
Central America and West Indies ..			1,000,000	750,000	750,000
South America—					
Argentine Republic	..	..	358,688,000	286,000,000	231,483,000
Brazil	..	..	35,000,000	27,000,000	27,000,000
Chile	..	..	17,430,000	31,500,000	31,500,000
Peru	..	..	9,940,000	14,500,000	15,000,000
Falkland Islands	..	..	4,324,000	3,200,000	3,200,000
Uruguay	..	..	156,968,000	95,000,000	80,000,000
All other	..	..	5,000,000	5,000,000	5,000,000
Total	..	..	587,350,000	462,200,000	393,183,000

(a) Computed on greasy basis. (b) Average for years 1909 to 1913 inclusive. (c) Where 1922 figures were not obtainable an earlier figure or an unofficial estimate has been inserted.

WOOL(a).—WORLD PRODUCTION, 1921 AND 1922—*continued.*

Countries.	Average Annual Pre-War Production.(b)	Production.	
		1921.	1922.(c)
	lbs.	lbs.	lbs.
Europe—			
Austria	15,360,000	1,250,000	1,250,000
Belgium	1,060,000	1,205,000	825,000
Bulgaria	23,700,000	17,637,000	17,637,000
Czecho-Slovakia .. ..	..	4,303,000	4,303,000
Denmark	3,508,000	1,598,000	1,323,000
Esthonia .. ..	..	13,224,000	13,224,000
Finland .. ..	..	3,250,000	3,300,000
France	80,688,000	38,500,000	38,220,000
Germany.. ..	25,600,000	54,013,000	51,809,000
Greece	14,000,000	11,934,000	13,420,000
Hungary	17,637,000	9,370,000	9,370,000
Iceland	1,980,000	1,980,000	1,980,000
Italy	55,000,000	50,000,000	50,000,000
Jugo-Slavia	25,446,000	29,762,000	24,251,000
Netherlands	3,556,000	4,400,000	4,400,000
Norway	8,160,000	4,409,000	4,409,000
Poland .. ..	..	6,725,000	6,725,000
Portugal	10,000,000	7,275,000	7,717,000
Rumania.. ..	13,228,000	14,000,000	18,032,000
Russia	320,000,000	150,000,000	150,000,000
Spain	52,000,000	165,347,000	165,347,000
Sweden	6,060,000	6,613,000	6,613,000
Switzerland	1,049,000	800,000	800,000
Turkey	28,000,000	..	..
United Kingdom	134,000,000	102,297,000	103,217,000
All other .. ..	..	15,000,000	15,000,000
Total	840,032,000	714,892,000	713,172,000
Asia—			
British India	60,000,000	60,000,000	60,000,000
China	50,000,000	61,320,000	61,320,000
Persia	12,146,000	12,146,000	12,146,000
Russia in Asia	60,000,000	45,000,000	45,000,000
Turkey in Asia	90,000,000	60,000,000	60,000,000
All other	1,000,000	1,000,000	1,000,000
Total	273,146,000	239,466,000	239,466,000
Africa—			
Algeria	35,221,000	35,550,000	35,155,000
British South Africa	157,761,000	161,700,000	187,000,000
Tunis	3,735,000	6,930,000	6,765,000
Morocco	14,850,000	18,640,000	19,175,000
Total	211,567,000	222,820,000	248,095,000
Oceania—			
Australia.. ..	700,193,000	547,503,000	631,514,000
New Zealand	198,474,000	191,614,000	175,000,000
Total	898,667,000	739,117,000	806,514,000
Total all other Countries	13,000,000	13,000,000	15,000,000
GRAND TOTAL	3,157,082,000	2,687,310,000	2,697,192,000

(a) Computed on greasy basis. (b) Average for years 1909 to 1913 inclusive. (c) Where 1922 figures were not obtainable an earlier figure or an unofficial estimate has been inserted.

6. **Wool Locally Used.**—The quantity of wool used in the woollen and tweed mills of the various States during the past five years was approximately as follows :—

**WOOL.—GREASY, USED IN LOCAL WOOLLEN AND TWEED MILLS,
1918 TO 1921-22.**

State.	1918.	1918-19.	1919-20.	1920-21.	1921-22.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	a 6,118,000	6,769,284	7,054,962	7,206,896	6,648,224
Victoria	a 7,344,035	7,823,050	11,300,400	12,799,593	13,293,011
Queensland	268,917	268,917	634,376	556,232	1,822,494
South Australia	a 734,723	654,758	693,297	683,779	608,098
Western Australia					
Tasmania	1,301,006	1,301,006	997,542	1,129,722	1,043,706
Total	15,766,681	16,817,015	20,680,577	22,376,222	23,415,533

(a) Year ended 30th June.

The total consumption of wool in Australia cannot be given, as particulars in respect of wool-combing and knitting establishments are not collected in all the States. An estimate of home requirements may, however, be obtained from the purchases made by Australian manufacturers at local wool sales, the total purchases in 1921-22 amounting to about 56,000,000 lbs.

7. **Exports of Wool.**—(i) *Greasy-Quantities.* Prior to the war, about 31 per cent. of the exports of wool from Australia was despatched to the United Kingdom, whereas the shipments for the same destination during the past five years have averaged 68 per cent. The other leading consignees for the last five years were the United States of America, Japan, France, Belgium, and Italy. The following table shows for the years 1917-18 to 1921-22 the quantities of "greasy" wool exported, and the principal countries of destination :—

WOOL IN THE GREASE.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	139,113,437	352,282,663	397,688,435	283,583,260	337,775,993	1,510,443,788
United States of America ..	57,425,217	71,776,334	28,326,008	34,291,220	45,778,371	237,597,150
France	5,675,577	3,719,125	32,243,017	32,484,058	136,751,611	210,873,388
Italy	17,641,985	10,036,918	44,597,155	15,975,186	39,629,626	127,880,870
Belgium			39,189,760	26,021,710	55,690,271	120,901,741
Japan	2,919,477	5,319,577	8,928,971	9,856,174	50,775,592	77,799,791
Germany				8,715,299	39,830,067	48,545,366
Egypt	15,522,281	10,950,893			290	26,473,464
Canada	4,726,317	3,152,424		362,915	1,619,372	9,861,028
India	778,286	795,792		381,516	613,701	2,569,295
Other Countries			1,360,782	6,228,698	2,255,819	9,845,299
Total	243,802,577	458,033,726	552,334,128	417,900,036	710,720,713	2,382,791,180

(ii) *Scoured and Washed—Quantities.* Similar particulars concerning the exports of "scoured and washed" wool are as follows :—

WOOL SCOURED AND WASHED(a).—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	59,247,374	103,261,254	70,454,411	43,100,738	65,815,973	341,879,750
Belgium			13,931,527	10,648,048	16,153,469	40,733,044
Japan	4,779,081	3,447,825	3,676,467	3,719,499	5,051,529	20,674,401
France	62,148	27,239	105,177	1,544,101	13,271,181	15,009,846
United States of America ..	1,446,501	1,460,294	2,600,657	6,490,418	1,880,728	13,878,598
Germany				279,822	3,209,868	3,489,690
Italy	475,914			568,690	1,500,550	2,545,154
Egypt	1,074,558	35,780				1,110,338
India	51,664	216,326		130,260	48,831	447,081
Other Countries	299,490	687,271	282,537	1,642,802	1,627,222	4,539,322
Total	67,436,730	109,135,989	91,050,776	68,124,378	108,559,351	444,307,224

(a) Including "tops."

The figures for "scoured and washed wool" include tops, amounting in 1917-18 to 4,571,357 lbs. valued at £1,510,799; in 1918-19, 2,822,578 lbs., valued at £935,212; in 1919-20; 6,148,118 lbs., valued at £2,957,679; in 1920-21, 6,598,681 lbs., valued at £2,049,588, and in 1921-22, 6,200,505 lbs., valued at £1,207,048. The total exports of wool tops during the last five years amounted to 26,341,239 lbs., valued at £8,660,326, of which 18,395,708 lbs., or nearly 70 per cent., were shipped to Japan.

(iii) *Total Value of Exports.* The total value of the wool exported from Australia to the principal countries during the five years under review was:—

WOOL EXPORTS.—TOTAL VALUE, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ..	15,648,660	34,563,566	37,256,915	21,889,438	23,013,128	132,371,707
United States of America ..	4,389,755	4,982,056	2,516,142	3,836,987	4,347,360	20,072,300
Japan ..	1,796,089	1,400,192	2,010,732	2,107,473	4,438,672	11,753,158
France ..	372,453	304,410	2,352,749	1,357,358	6,842,265	11,229,235
Belgium ..	..	..	3,356,349	2,380,519	3,784,065	9,520,933
Italy ..	1,005,058	548,142	2,832,951	1,164,280	2,667,081	8,217,512
Germany ..	..	..	..	364,196	2,404,833	2,769,029
Egypt ..	939,149	613,814	..	..	8	1,552,971
Canada ..	338,087	238,924	63,520	79,588	245,421	965,540
India ..	66,780	78,336	..	45,198	50,243	240,557
Other Countries ..	30,833	37,315	154,445	555,723	184,167	962,483
Total ..	24,586,864	42,766,755	50,543,803	33,780,760	47,977,243	199,655,425

8. *Average Export Value.*—The average values per lb. of Australian greasy wool according to the export returns for the past five years have been as follows:—

AUSTRALIAN GREASY WOOL.—EXPORT VALUE PER LB., 1917-18 TO 1921-22.

Year	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	d.	d.	d.	d.	d.
Average value per lb. ..	16.71	16.49	16.69	14.53	13.16

9. *Exports and Local Sales of Wool, States, 1921-22.*—About 86 per cent. of the wool grown in Australia is sold in the local markets prior to export. Buyers from the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India, attend the sales conducted in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Perth, Hobart, and Launceston.

The following table shows the number of bales of wool exported overseas from each State during the season ended 30th June, 1922, and bales sold for shipment, for use in local woollen mills, for scouring, etc. It must be noted that as considerable quantities of wool grown in some States are sold in or shipped from others these figures do not show actual local production, but total overseas shipments and sales.

WOOL.—EXPORTS AND LOCAL SALES, SEASON 1921-22.

State.	Overseas Exports.		Local Sales.(a)	
	Bales.	%	Bales.	%
New South Wales ..	1,008,361	39.09	920,906	41.36
Victoria ..	627,143	24.31	(b)608,029	27.30
Queensland..	502,687	19.49	371,990	16.71
South Australia ..	217,070	8.42	228,795	10.27
Western Australia ..	174,741	6.77	70,134	3.15
Tasmania ..	49,482	1.92	26,904	1.21
Total ..	2,579,484	100.00	2,226,758	100.00

(a) Including wool sold to local woollen mills, scourers, etc. (b) Including wool sold at Albury.

10. Exports and Local Sales of Wool, Australia, 1895 to 1922.—The number of bales of wool exported from Australia and the number sold at local sales prior to shipment, or taken for local use from 1895 onwards are shown in the following table :—

WOOL.—EXPORTS AND LOCAL SALES, AUSTRALIA, 1895 TO 1922.

Year ended 30th June.				Overseas Exports.	Local Sales.(a)	Ratio of Wool sold locally to Exports.
				Bales.	Bales.	%
1895	..	..	..	1,595,652	817,333	51.22
1900	..	..	..	1,221,163	807,031	66.09
1905	..	..	..	1,218,969	926,940	76.04
1910	..	..	..	1,921,705	1,624,561	84.54
1911	..	..	..	1,975,378	1,642,555	83.15
1912	..	..	..	2,020,547	1,700,494	84.16
1913	..	..	..	1,718,486	1,518,650	88.37
1914	..	..	..	1,966,576	1,703,744	86.64
1922	..	..	..	2,579,484	2,226,758	86.33

(a) Including wool absorbed by local woollen mills and wool-scouring establishments.

The steady development of the Australian wool market is clearly shown in this table. In the nineteen years ended 1914, the quantity sold locally more than doubled, and the ratio of wool sold locally to that exported increased from 51 per cent. in 1895 to over 86½ per cent. in the season ended 30th June, 1914. Particulars for the years 1915 to 1921 are not comparable owing to the abnormal conditions arising from the war, but the figures for the 1921–22 selling season indicate a return to normal, despite the heavy disposals consequent upon the huge stocks of carry-over wool from the previous season.

11. Quantities of Various Descriptions of Wool Sold in Each State.—The quantities and ratios of the various descriptions of wool marketed in each State are given in the following table :—

WOOL.—LOCAL SALES, DESCRIPTIONS, 1921–22.

Description of Wool.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy ..	836,032	597,864	332,590	226,309	68,104	26,904	2,087,803
Scoured ..	84,874	10,165	39,400	2,486	2,030	..	138,955
Total ..	920,906	608,029	371,990	228,795	70,134	26,904	2,226,758
Fleece, etc. ..	881,307	571,063	350,433	208,330	63,935	26,092	2,101,160
Lambs' ..	39,599	36,966	21,557	20,465	6,199	812	125,598
Total ..	920,906	608,029	371,990	228,795	70,134	26,904	2,226,758
Merino ..	674,103	259,527	364,855	214,124	57,271	8,511	1,578,391
Crossbred and all strong breeds ..	246,803	348,502	7,135	14,671	12,863	18,393	648,367
Total ..	920,906	608,029	371,990	228,795	70,134	26,904	2,226,758

(a) Including wool sold at Albury.

WOOL.—LOCAL SALES, DESCRIPTIONS, 1921-22—*continued.*

Description of Wool.	N.S.W.	Victoria, (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	%	%	%	%	%	%	%
Greasy	90.78	98.33	89.41	98.91	97.11	100.00	93.76
Scoured	9.22	1.67	10.59	1.09	2.89	..	6.24
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Fleece, etc. ..	95.70	93.92	94.20	91.06	91.16	96.98	94.36
Lambs	4.30	6.08	5.80	8.94	8.84	3.02	5.64
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Merino	73.20	42.68	98.08	93.59	81.66	31.63	70.88
Crossbred and all strong breeds ..	26.80	57.32	1.92	6.41	18.34	68.37	29.12
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) Including wool sold at Albury.

Wool in the grease represented more than 93 per cent. of the total marketed during 1921-22. Of fleece and lambs' wool, the former represents 94.36, and the latter 5.64 per cent. The class of wool produced is largely merino, which is almost exclusively grown in the northern, western, and central parts of the continent, the bulk of the merino wool dealt with in Victoria coming from Riverina and other parts of New South Wales. The development of the frozen mutton and lamb export trade and the resultant raising of a type of sheep suitable for both mutton and wool have led to a considerable increase in the production of crossbred wool throughout Australia during recent years. The proportion of such wool sold to the total sales amounted to 18.6 per cent. in 1912, whereas, eight years later, in 1919-20, the proportion had increased to 33.9 per cent. The accumulation after the war of large stocks of coarse wools in practically all the producing countries caused a fall in prices, and brought about a movement in Australia in favour of merino, which was reflected in the decreased percentage of crossbred wool sold in the 1921-22 season. If the catalogues of the latter season had not included considerable quantities of crossbred wool, which were unsaleable in the previous season, the statistics of the sales would have shown a more pronounced return to merino. While the requirements of the frozen mutton and lamb trade and the advance of closer settlement, with its preference for crossbred sheep-raising in conjunction with wheat-growing or mixed farming, will compel the maintenance of the crossbred flocks, the extraordinary demand for fine wool at remunerative rates will powerfully influence the Australian flockmasters to concentrate in the future on the production of merino wool, and its close counterparts, comeback and fine crossbred.

12. Percentages of Various Descriptions of Wool Sold in each State.—The following table gives the percentage of each description of wool sold in the several States on the total sold in Australia during the season 1921-22 :—

WOOL.—LOCAL SALES, PERCENTAGES, 1921-22.

Description of Wool.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	%	%	%	%	%	%	%
Greasy	40.04	28.64	15.93	10.84	3.26	1.29	100.00
Scoured	61.08	7.32	28.35	1.79	1.46	..	100.00
Fleece, etc. ..	41.94	27.18	16.68	9.92	3.04	1.24	100.00
Lambs	31.53	29.43	17.16	16.29	4.94	0.65	100.00
Merino	42.71	16.44	23.12	13.56	3.63	0.54	100.00
Crossbred and all strong breeds ..	38.07	53.75	1.10	2.26	1.98	2.84	100.00

The bulk of the crossbred wool of Australia is grown in Victoria and the southern parts of New South Wales, Tasmania, where crossbred sheep largely predominate, coming

next in order, followed by small parcels from South Australia and Western Australia. In Victoria, where more than half the wool production is crossbred, a noticeable feature of the season has been a general fine-up of the medium and coarse crossbreds by the use of merino rams, and it is probable that the next two clips will have a greater proportion of comeback in them than for some years past.

13. The Wool Market.—(i) *The 1921–22 Season.* Following the depression in the wool market during 1920–21, and with 537,946 bales of unsold wool in addition to the incoming clip to be disposed of, the prospects for the 1921–22 season at the outset appeared poor. The causes which had brought about stagnation in the markets of the previous season had, however, reached their lowest point in 1920–21. The international outlook was more hopeful, and the demand for woollen fabrics was insistent consequent upon the restricted manufacture in the transition period due to the dislocation of credit and exchange. These conditions strengthened as the season advanced, with the result that the carry-over wools were cleared by November, and the great bulk of the new season's production had been sold at the close of the statistical year in the following June. The recovery of the wool market was complete, and confidence had been restored in the capacity of merino and fine crossbred wools to command values well above pre-war levels and the increased costs of production.

The 1921–22 clip was grown under generous pastoral conditions, and the wool opened up in sound, healthy condition. The bulk of the staple was well grown and of attractive appearance, and possessed very good spinning properties.

During the year the wool sold in Australia reached 2,226,758 bales, valued at £37,296,723, compared with 791,409 bales, valued at £13,114,997 in the previous year; an increase of 1,435,349 bales in quantity and £24,181,726 in value. Though the market conditions were vastly superior to the previous season, growers of faulty wools did not benefit to the same extent as producers of the choicer varieties. Still, the improved selling season was beneficial to every grower, and the tremendous clearances effected in all the markets prepared the way for more normal seasons, and for more payable results to growers of coarse crossbred wools.

Although the 1921–22 selling season was an exceptionally good one, the highest prices realized for greasy and scoured merino fleece were 7d. and 13d. per lb. respectively less than the maximum rates obtained in 1920–21. New records were established in greasy merino broken, pieces, bellies and lambs, although the scoured varieties fell below the previous highest bids, while greasy and scoured comeback and crossbred fleeces and lambs failed to even approximate existing records. The highest prices for the past nine seasons for wools sold at auction, or fixed by appraisalment at selling centres in Australia are as follows:—

**RECORD PRICES OBTAINED FOR WOOL IN AUSTRALIAN MARKETS, 1913–14
TO 1921–22.**

Description.	Price.	Brand.	Bales.	Selling Centre.	Season.
Greasy merino :	d.				
Fleece ..	49½	Ware (conj.) ..	5	Geelong ..	1920–21
Broken ..	34	R/Langiwilli ..	6	Geelong ..	1921–22
Pieces ..	29½	R/Langiwilli ..	6	Geelong ..	1921–22
Bellies ..	25½	Wurrook ..	8	Geelong ..	1921–22
Locks ..	13	MP (conj.) ..	..	Western Australia	1917–18
Lambs ..	32¼	Blythvale ..	4	Geelong ..	1921–22
Greasy comeback :					
Fleece ..	37½	North Station ..	6	Geelong ..	1920–21
Lamb ..	24½	JM/Table Top ..	1	Melbourne ..	1917–18
Greasy crossbred :					
Fleece ..	30½	CLF/Warrawie ..	13	Geelong ..	1920–21
Lamb ..	23½	JM/Table Top ..	3	Albury ..	1919–20
Scoured merino :					
Fleece ..	64	WG/Kedron ..	58	Brisbane ..	1920–21
Pieces ..	40½	M/Moselle Downs ..	3	Brisbane ..	1919–20
Lambs ..	44	PB & Co/Notus Downs	4	Brisbane ..	1919–20
Scoured crossbred :					
Fleece ..	40¾	O'Beirne/Linton ..	..	Geelong ..	1917–18

(ii) *Wool Realization Scheme.* The British Australian Wool Realization Association Ltd. ("Bawra") was formed on the 27th January, 1921, for the purpose of selling in conjunction with the existing clip 50 per cent. of the Australian carry-over wool acquired by the Association on account of the Australian growers; also to dispose of as agents all carry-over wools owned by the British Government and consisting of New Zealand, Falkland Islands, South African and 50 per cent. of Australian wools as promptly and to the best advantage as market conditions would permit, while at the same time contributing to stabilize the wool market which had become demoralized on the return to free wool sales. Towards the end of the year 1921, 80,550 bales of South African wool owned by the British Government were handed over to the Association for disposal under the Agency Agreement.

The assets of the Association consisting of cash, wool and other assets were capitalized at £22,000,000, and, subject to certain reservations, each supplier of Australian wool during the British Government purchase scheme was allotted negotiable documents in proportion to the appraised value of the wool which he contributed.

The marketing of B.A.W.R.A. wools has been successfully carried out at various centres in England, and on the Continent, and during the twelve months ended 30th June 1923, 777,500 bales were disposed of, leaving the stocks on hand at that date 523,000 bales, consisting of 2,000 bales of merino and 521,000 bales of crossbred. The details of stocks and disposals are set out in the following table:—

STOCKS AND DISPOSALS OF B.A.W.R.A. WOOLS, 1920 TO 1923.

Description.				Stocks, 31st December, 1920.	Disposals, 1st July, 1922, to 30th June, 1923. (a)	Stocks, 30th June, 1923.
				Bales.	Bales.	Bales.
Australian:—						
Merino	..	..	..	904,180	202,000	1,000
Crossbred	..	..	..	931,825	316,000	334,000
New Zealand:—						
Merino	..	..	..	3,181	1,500	1,000
Crossbred	..	..	..	769,762	240,000	187,000
Falkland Islands	..	..	..	2,329	..	..
South African	..	..	..	80,550	18,000	..
Grand Totals	..	..	..	2,691,827	777,500	523,000

(a) Approximate figures.

The whole of the Australian wool purchased by the British Imperial Government has now left Australia, the final shipment being made by the "Leitrim," which lifted 301 bales on the 1st May, 1923, included in which was the last bale of Australian wool covered by the British Government's contracts.

14. *Bounties on Combed Wool or Tops Exported.*—The details of the provisions and operations of the Bounties Act 1907, relative to Australian combed wool or tops exported, are contained in previous issues of the Year Book. During the eight years ended 31st December, 1915, in which the bounties were payable, a sum of £70,001 was paid on 17,990,131 lbs. of wool tops produced.

Figures showing the exports of wool tops for the years 1917–18 to 1921–22 inclusive will be found in 7 hereof.

15. **United Kingdom Importation of Wool.**—The appended tabular statement of the quantity and value of wool imported into the United Kingdom during the year 1921 from the principal wool-producing countries shows the important position which Australia occupies in the supply of wool to the mother country:—

WOOL.—IMPORTS, UNITED KINGDOM, 1921.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ..	342,661,500	18,937,739	Belgium ..	3,842,900	243,548
Union of S. Africa	169,540,300	8,910,295	Uruguay ..	4,343,900	174,801
New Zealand ..	164,812,300	8,327,222	Falkland Islands	3,231,100	154,432
Argentine Re-public ..	50,453,500	1,695,333	U.S. of America	130,400	5,914
Chile ..	34,547,200	1,462,552	Turkey ..	49,100	1,892
British India ..	56,635,100	1,143,892	Other countries	9,022,400	352,673
France.. ..	7,043,000	257,596	Total ..	846,312,700	41,667,889

Of the importations of wool into the United Kingdom, Australian wool represented 40 per cent. of quantity and 45 per cent. of value, and New Zealand 19 per cent. of quantity and 20 per cent. of value. It is interesting to note that 570,534,000 lbs., valued at £28,666,671, were received from British Possessions, being 67 per cent. of the total weight imported and 69 per cent. of the total value.

§ 6. Trade in Hides and Sheepskins.

1. **Extent of Trade.**—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the value of cattle hides and sheepskins exported from Australia during the five years 1917–18 to 1921–22 amounting to £11,303,644, or an average of £2,260,729 per annum.

2. **Sheepskins with Wool.**—By far the largest item included in the amount mentioned in the preceding sub-section arises from the value of sheepskins with wool—the exports of which during the five years aggregated £7,046,666. The largest purchaser of sheepskins with wool is the United Kingdom, to which nearly 80 per cent. of the consignments were despatched during the last five years. France ranked next in order of importance with 15 per cent., while the remaining 5 per cent. was shipped principally to Belgium and the United States of America. The exports of sheepskins with wool during each of the years from 1917–18 to 1921–22 were as follows:—

SHEEPSKINS WITH WOOL.—EXPORTS, AUSTRALIA, 1917–18 TO 1921–22.

Particulars.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.	Total for 5 years.
Sheepskins (with wool) .. No.	2,172,176	6,005,291	6,046,122	4,478,853	7,270,660	25,973,102
Value £	732,030	1,845,057	1,967,354	1,155,643	1,346,582	7,046,666

3. **Sheepskins without Wool.**—In the case of sheepskins without wool the principal countries of consignment are the United States of America and the United Kingdom. These two countries were responsible for nearly 90 per cent. of the exports during the past five years, the purchases of the United States of America alone amounting to 64 per cent. of the total shipments. Particulars concerning exports are as follows:—

SHEEPSKINS WITHOUT WOOL.—EXPORTS, AUSTRALIA, 1917–18 TO 1921–22.

Particulars.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.	Total for 5 years.
Sheepskins (without wool) .. No.	898,644	794,065	4,177,084	704,296	116,553	6,690,642
Value £	95,369	96,056	631,445	86,663	6,880	916,413

4. **Hides.**—(i) *Exports.* The Australian export trade in cattle hides is considerable, though not so important as in former years. The depression in the frozen meat trade with the resultant reduction in slaughterings has reduced the average annual value of the exports during the past five years by nearly one-half of the pre-war totals. The trade in cattle hides is mainly with the United Kingdom and the United States of America, which countries took one-half and one-fourth respectively of the total quantity exported during the past five years. Italy with 100,000, and Belgium and Germany with shipments amounting to 75,000 were the next largest purchasers.

Particulars concerning the export of cattle hides during the past five years are as follows :—

CATTLE HIDES.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Particulars.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
Cattle Hides	.. No.	149,224	259,386	569,465	261,938	446,199	1,686,212
Value	.. £	364,397	566,720	1,504,116	375,412	530,355	3,341,000

The calfskins exported during the years 1917-18 to 1921-22 numbered 340,989, valued at £223,994, shipped mainly to the United States of America, the value of the skins taken by that country averaging 82 per cent. of the total exports during the past five years. The annual export of horse hides is very small, and averaged only 1,126 hides, valued at £1,809.

(ii) *Imports.* The import trade in cattle hides and calfskins is expanding and, with the exception of 1919-20, increases have taken place in the number imported during each of the last five years. New Zealand supplies the great bulk of these importations, and shipments of fairly large quantities are also obtained from the Pacific Islands. The number and value of cattle hides, including calfskins, imported into Australia during the five years 1917-18 to 1921-22 are as follows :—

CATTLE HIDES.—IMPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Particulars.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for 5 years.
No.	.. ..	132,218	260,237	205,662	313,442	451,373	1,362,932
Value	.. £	151,531	424,339	579,915	500,460	433,014	2,089,259

The number of horse hides imported into Australia is unimportant. Imports during the last five years numbered 15,694, valued at £18,249.

CHAPTER XVII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the “agricultural” years hereinafter mentioned are taken as ending on the 30th June.

§ 1. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil “under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions.” When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook’s expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow 8 acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here grain crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and 60 of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about 3 miles westward of Parramatta, where Phillip states “there are several thousand acres of exceeding good ground.” The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. **Early Records.**—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797,” Governor Hunter gives the acreage under crop as follows:—Wheat, 3,361 acres; maize, 1,527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6,877 acres; maize, 3,389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation.—(i) *General.* The following table shows the area under crop in each of the States and Territories of Australia at decennial intervals since 1860 and during each of the last five seasons. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860 to 1879 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large.

AREA UNDER CROP, 1860 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	260,798	387,282	3,353	359,284	24,705	152,860	..	..	1,188,282
1870-1	426,976	692,840	52,210	801,571	54,527	157,410	..	..	2,185,534
1880-1	629,180	1,548,809	113,978	2,087,237	57,707	140,788	..	..	4,577,699
1890-1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	..	..	5,430,221
1900-1	2,445,564	3,114,132	457,397	2,369,680	201,338	224,352	..	..	8,812,463
1910-11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	..	11,893,838
1917-18	4,461,172	4,110,225	727,958	3,079,778	1,679,772	238,199	134	1,744	14,298,982
1918-19	3,891,823	3,942,899	525,517	3,111,079	1,605,088	254,109	99	1,779	13,332,393
1919-20	3,771,468	4,000,815	563,762	3,058,770	1,628,163	270,955	365	2,109	13,296,407
1920-21	4,465,143	4,489,503	779,497	3,231,083	1,804,987	297,383	296	1,966	15,069,858
1921-22	4,445,828	4,530,312	804,507	3,378,764	1,901,680	293,708	283	1,942	15,357,024

The progress of agriculture was uninterrupted from 1860 onwards, reaching its maximum in 1915-16, when 18,528,234 acres were cultivated. Following that year the decline in wheat growing, and the effects of the drought of 1918-19, reduced the acreage to 13,296,407 acres in 1919-20, a decrease of 5,231,827 acres in the space of four years. In 1920-21 the area under wheat again began to expand, and during the latest two seasons under review the total acreage under cultivation increased by more than 2,000,000 acres. It may be observed that the maximum area cultivated in 1915-16 was the result of a special war effort, and eliminating that year, the 1921-22 season's acreage is practically identical with that of 1914-15. Since the latter year there has been no marked advance, the areas sown being generally dependent on seasonal influences.

(ii) *Relation to Population.* From the following table it will be seen that the decline in the acreage under crop per 1,000 of the population was arrested in 1920-21, and further slightly improved upon in 1921-22. Details for the past five seasons are as follows:—

AREA UNDER CROP PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	2,324	2,900	1,059	6,893	5,481	1,203	28	829	2,870
1918-19 ..	1,984	2,743	745	6,797	5,181	1,252	21	797	2,624
1919-20 ..	1,850	2,661	764	6,351	4,973	1,291	80	1,099	2,507
1920-21 ..	2,135	2,938	1,036	6,578	5,456	1,397	74	997	2,784
1921-22 ..	2,089	2,921	1,045	6,723	5,674	1,345	76	941	2,787

(iii) *Relation to Total Area.* The next table furnishes a comparison of the area under crop in the several States and Territories and Australia with the respective total areas. For Australia as a whole, the area under crop in 1921-22 represented only about 1 acre in every 124. In Victoria the proportion was about 1 acre in every 12, in New South Wales 1 in 44, in Tasmania 1 in 57, in South Australia 1 in 72, in Western Australia 1 in 328, in Queensland 1 in 535, in the Federal Territory 1 in 310, and in the Northern Territory about 1 in 1,184,158.

PERCENTAGE OF AREA UNDER CROP ON TOTAL AREA, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	%	%	%	%	%	%	%	%	%
1917-18 ..	2.253	7.308	0.170	1.266	0.269	1.420	..	0.290	0.751
1918-19 ..	1.965	7.010	0.122	1.279	0.257	1.515	..	0.296	0.700
1919-20 ..	1.904	7.113	0.131	1.257	0.261	1.615	..	0.351	0.698
1920-21 ..	2.255	7.982	0.182	1.328	0.289	1.772	..	0.327	0.792
1921-22 ..	2.245	8.054	0.187	1.389	0.304	1.751	..	0.323	0.807

3. **Artificially-sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, mainly sown on uncultivated land after burning off the existing vegetation and consequently not included with “area under crops.” Statistics regarding the area under such grasses are as shown hereunder:—

AREA UNDER SOWN GRASSES, 1917-18 TO 1921-22.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18	1,389,557	1,268,310	406,094	20,155	11,769	679,512	460	83	3,775,940
1918-19	1,438,382	1,269,493	418,467	21,987	14,158	666,954	600	83	3,830,124
1919-20	1,542,446	1,062,244	449,019	18,107	16,672	667,390	500	871	3,757,249
1920-21	1,816,104	1,051,290	450,780	14,805	17,265	660,000	500	71	4,010,815
1921-22	2,005,444	1,032,104	459,914	20,890	18,441	781,000	550	71	4,318,414

The considerable increase in the area of the grass lands of Australia is due in large measure to the great development of the dairying industry which has taken place during recent years, and which is referred to in the succeeding chapter.

§ 3. Relative Importance of Crops.

1. **Distribution of Crops.**—The following table gives the areas in the several States under each of the principal crops for the season 1921–22 :—

DISTRIBUTION OF CROPS, 1921–22.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	3,194,408	2,611,193	164,670	2,384,012	1,336,228	27,985	..	541	9,719,042
Oats ..	69,619	318,681	2,274	125,148	162,866	54,642	..	176	733,406
Maize ..	146,687	23,227	135,034	186	43	..	9	..	305,186
Barley—									
Malting ..	3,569	47,686	5,558	151,257	4,120	6,472	..	..	218,662
Other ..	1,462	52,441	2,172	19,630	3,774	769	..	..	80,248
Beans and Peas ..	269	9,423	89	6,021	725	20,989	..	..	37,516
Rye ..	1,152	1,320	5	312	331	830	..	..	3,950
Other Cereals ..	..	..	8	..	35	..	..	..	43
Hay ..	749,738	1,159,135	98,155	559,285	335,561	91,443	12	1,190	2,994,519
Green Forage ..	128,965	89,410	147,135	50,121	27,396	9,481	..	..	452,508
Grass Seed ..	..	1,953	639	38	..	964	..	..	3,594
Orchards and other									
Fruit Gardens	75,746	89,491	28,035	32,295	19,012	36,565	..	5	281,149
Vines—									
Productive ..	7,744	24,627	1,042	30,625	2,751	..	..	..	66,789
Unproductive ..	4,839	8,548	239	10,799	1,200	..	..	..	25,625
Market Gardens ..	8,217	14,304	1,965	1,486	2,274	681	..	27	28,954
Sugar-cane—									
Productive ..	5,400	..	122,956	..	..	..	..	..	128,356
Unproductive ..	7,380	..	61,557	..	..	..	..	..	68,937
Potatoes ..	29,491	63,895	9,553	5,795	3,612	36,795	..	3	149,144
Onions ..	140	6,158	266	369	96	34	..	..	7,063
Other root crops ..	1,151	2,561	3,219	371	313	3,359	45	..	11,019
Tobacco ..	1,164	604	198	1	..	..	..	..	1,967
Broom Millet ..	1,230	801	195	..	..	..	4	..	2,230
Pumpkins and									
Melons ..	2,926	1,514	10,199	276	643	..	98	..	15,656
Hops ..	..	104	..	3	..	1,455	..	..	1,562
Cotton ..	..	..	(a) 2,802	3	..	..	..	..	2,805
All other crops ..	4,531	3,231	6,542	731	700	1,244	115	..	17,094
Total Area ..	4,445,828	4,530,312	804,507	3,378,764	1,901,680	293,708	283	1,942	15,357,024

(a) 858 unproductive acres.

2. **Relative Areas of Crops in States and Territories.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 50,000 acres in Australia, the proportion of each in the various States and Territories to the total area under crop for the season 1921–22 is shown in the next table. In four of the States, *viz.*, New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in the same States the hay crop is second in importance. In Victoria and Western Australia, the oat crop occupies third position, while maize ranks third in New South Wales and barley in South Australia. In Queensland, the principal crops in the order of importance are sugar-cane, wheat, green forage and maize, while in Tasmania hay, oats, potatoes, and orchards and fruit gardens occupy the leading positions. For Australia as a whole, the wheat, hay, and oat crops represent nearly 88 per cent. of the total area under crop.

RELATIVE AREAS UNDER CROP, 1921-22.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	%	%	%	%	%	%	%	%	%
Wheat ..	71.85	57.64	20.47	70.56	70.27	9.53	..	27.86	63.29
Hay ..	16.86	25.59	12.20	16.55	17.65	31.13	4.24	61.28	19.50
Oats ..	1.57	7.03	0.28	3.70	8.56	18.60	..	9.06	4.77
Green Forage ..	2.90	1.97	18.29	1.48	1.44	3.23	..	..	2.95
Maize ..	3.30	0.51	16.79	0.01	0.00	..	3.18	..	1.99
Barley ..	0.11	2.21	0.96	5.06	0.41	2.47	..	..	1.95
Orchards and Fruit Gardens	1.71	1.98	3.48	0.96	1.00	12.45	..	0.26	1.83
Sugar-cane	0.29	..	22.93	..	..	..	..	..	1.28
Potatoes ..	0.66	1.41	1.19	0.17	0.19	12.53	..	0.15	0.97
Vineyards ..	0.28	0.73	0.16	1.23	0.21	..	..	..	0.60
All other ..	0.47	0.93	3.25	0.28	0.27	10.06	92.58	1.39	0.87
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. Area of Chief Crops, Australia, 1917-18 to 1921-22.—The acreage devoted to each of the principal crops in Australia during the last five seasons is shown below :—

AREA OF CHIEF CROPS.—AUSTRALIA, 1917-18 TO 1921-22.

Crop.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat ..	9,774,658	7,990,165	6,419,160	9,072,167	9,719,042
Hay ..	2,212,914	2,692,904	3,125,653	3,233,189	2,994,519
Oats ..	615,800	768,152	1,068,296	936,996	733,406
Green Forage ..	373,976	586,440	1,401,209	406,954	452,508
Maize ..	332,057	286,812	265,469	284,283	305,186
Orchards and Fruit Gardens ..	262,134	264,751	271,894	278,551	281,149
Barley ..	204,870	254,869	267,309	334,747	298,910
Sugar-cane ..	186,358	171,024	159,037	174,001	197,293
Potatoes ..	136,241	111,169	113,900	140,195	149,144
Vineyards ..	67,862	70,058	73,326	81,165	92,414
All other Crops ..	132,112	136,049	131,154	127,610	133,453
Total ..	14,298,982	13,332,393	13,296,407	15,069,858	15,357,024

During the period under review the area of the several crops has fluctuated considerably, the principal variation occurring in wheat, caused by disorganized markets and dry seasons. Most of the other crops also reflect economic and seasonal influences. Orchards and fruit gardens and vineyards are the only items which have consistently progressed each year, though with the exception of wheat all the remaining crops have extended their areas since 1917-18.

§ 4. Wheat.

1. Progress of Wheat-Growing.—(i) *Area and Production.* The area and yield of wheat for grain are given below for each State for the last five years, and are shown from the year 1860 onwards in the graphs hereinafter :—

WHEAT.—AREA AND PRODUCTION, 1917-18 TO 1922-23.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	3,328,856	2,690,216	127,815	2,355,682	1,249,762	21,812	515	9,774,658
1918-19 ..	2,409,633	2,214,490	21,637	2,186,349	1,146,103	11,917	36	7,990,165
1919-20 ..	1,474,935	1,918,269	46,478	1,926,915	1,041,827	11,497	139	6,419,160
1920-21 ..	3,126,775	2,295,865	177,320	2,167,646	1,275,675	28,284	602	9,072,167
1921-22 ..	3,194,408	2,611,198	164,670	2,384,012	1,336,228	27,985	541	9,719,042
1922-23a ..	2,962,140	2,644,314	145,492	2,453,086	1,550,778	22,800	..	9,778,610
YIELD.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush.	Bushels.
1917-18 ..	37,704,626	37,737,552	1,035,268	28,692,594	9,303,787	252,383	7,374	114,733,584
1918-19 ..	18,324,640	25,239,871	104,509	22,936,925	8,845,387	186,570	360	75,638,262
1919-20 ..	4,387,209	14,858,380	311,638	14,980,413	11,222,950	213,589	813	45,974,992
1920-21 ..	55,610,993	39,468,625	3,707,357	34,258,914	12,248,080	565,874	14,007	145,873,850
1921-22 ..	42,759,389	43,867,596	3,025,786	24,946,525	13,904,721	577,178	7,611	129,088,806
1922-23a ..	28,594,000	35,697,220	1,877,836	28,784,767	14,042,726	450,000	..	109,446,549

(a) Final figures for Victoria and Queensland, those for remaining States approximate.

The area devoted to the production of wheat for grain reached its maximum in 1915-16, when, in response to the appeal by the Government for an increased supply of wheat for Imperial purposes, the farmers of Australia sowed 12,484,512 acres. After that year, however, there was a serious decline, brought about largely by war conditions and unfavourable seasons, and the area in 1919-20 fell to 6,419,160 acres, or only half that of 1915-16. To arrest this decline an endeavour was made throughout the wheat-growing States to increase the acreage during 1920-21, and the promise of remunerative Government guarantees, coupled with the prospects of high prices, proved sufficient inducement for growers to sow 9,072,167 acres, an increase of 2,653,007 acres on the 1919-20 area. The area was further extended in 1921-22, when 646,875 additional acres were sown, making the total acreage 9,719,042.

Although final figures for 1922-23 for all the States are not yet available, the data to hand indicate the total area under wheat for grain in Australia at about 9,778,610 acres, representing an increase of nearly 60,000 acres on the 1921-22 figures. This increase was occasioned by considerable additions to the wheat areas of Western Australia and South Australia.

The harvest of 179,065,703 bushels reaped in 1915-16 represents the maximum production of wheat in Australia. Yields exceeding 100,000,000 bushels have only been garnered on seven occasions, all of which have occurred since 1913-14. The annual production of wheat during the seasons 1912-13 to 1921-22 averaged 106,301,380 bushels, and the amount by which this average may be exceeded depends mainly on seasonal conditions. Though increased areas were placed under wheat in 1921-22, conditions were not so propitious as in 1920-21, with the result that nearly 17,000,000 less bushels were harvested in 1921-22 than in 1920-21.

(ii) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the last five seasons, and for the decennium 1912-22 :—

WHEAT.—YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18 ..	11.33	14.03	8.10	12.18	7.44	11.57	14.32	11.74
1918-19 ..	7.60	11.40	4.83	10.49	7.72	15.66	10.00	9.47
1919-20 ..	2.98	7.75	6.71	7.77	10.77	18.58	5.85	7.16
1920-21 ..	17.79	17.19	20.91	15.80	9.60	20.01	23.27	16.08
1921-22 ..	13.39	16.80	18.37	10.46	10.41	20.62	14.07	13.28
Average 10 seasons, 1912-22	11.62	12.82	13.18	10.59	9.11	18.34	14.96	11.40

As the above figures show, there were considerable variations in the average yields, chiefly due to the vagaries of the seasons. The magnificence of the 1920-21 season is clearly reflected in the exceptional average of 16.08 bushels obtained in that year, an average which has only once been exceeded, and that by the 16.35 bushels reaped as far back as 1866, when less than 1,000,000 acres were sown in relatively fertile areas.

The extension of the practice of fallowing, and improved cultural methods have increased the ten yearly average yield from 10.48 bushels in the previous decade to 11.40 bushels during the past decennium, or by nearly 1 bushel to the acre.

(iii) *Relation to Population.* During the seasons embraced in the following table, the Australian production of wheat per head of population has varied between $8\frac{3}{4}$ bushels in 1919-20 and 27 bushels in 1920-21. The State in which wheat-growing generally occupies the most important position relatively to population is South Australia, which in 1921-22 had a yield averaging nearly 50 bushels per head. Queensland and Tasmania are the States in which the average production of wheat per head is least, the quantity raised being generally below that required for local consumption. Particulars for the past five seasons are as follows :—

WHEAT.—YIELD PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18 ..	19,642	26,628	1,506	64,214	30,356	1,274	3,505	23,026
1918-19 ..	9,342	17,559	148	50,115	28,554	919	161	14,885
1919-20 ..	2,153	9,884	423	31,105	34,278	1,017	424	8,667
1920-21 ..	26,594	25,828	4,928	69,749	37,024	2,659	7,103	26,952
1921-22 ..	20,101	28,284	3,930	49,635	41,485	2,643	3,688	23,427

The normal annual consumption of wheat in Australia, exclusive of the requirements for seed, poultry and other live stock, is 320 lbs. (5.33 bushels) per head of population.

2. *Australian and Foreign Wheat Yields.*—(i) *Average Yield.* In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world, ranging from Denmark with a maximum of 51 bushels per acre to Russia in Asia with a minimum of 7 bushels per acre. Australia, with approximately 13.3, occupies a relatively subordinate position.

WHEAT.—YIELD PER ACRE, VARIOUS COUNTRIES, 1921.

Country.	Average Yield in bushels per acre.	Country.	Average Yield in bushels per acre.
Denmark	51.0	Uruguay	16.4
Netherlands	49.2	Spain	14.0
Belgium	42.2	Jugo-Slavia	13.6
United Kingdom ..	35.4	Australia (a)	13.3
Sweden	34.9	Canada	13.0
Switzerland	32.4	United States	12.7
Germany	30.3	Rumania.. .. .	12.3
New Zealand	29.9	Algeria	12.0
Egypt	25.4	French Morocco ..	11.9
France	24.6	Greece	11.3
Czecho-Slovakia ..	24.1	Argentine Republic ..	11.1
Japan	21.3	Russia in Europe (1916) ..	10.4
Bulgaria	18.0	Union of South Africa ..	10.4
Chile	18.0	India	9.7
Austria	17.1	Portugal	7.9
Poland	17.1	Tunis	7.1
Hungary	17.0	Russia in Asia (1915) ..	7.0
Italy	16.4		

(a) Average yield per acre for 10 years, 11.40.

(ii) *Total Production.* The latest available official statistics of the production of wheat in various countries are given in the following table :—

WHEAT.—YIELD IN VARIOUS COUNTRIES, 1921.

Country.	Yield in bushels.	Country.	Yield in bushels.
United States	794,906,147	Poland	35,576,062
Russia in Europe (1917) ..	377,900,393	Turkey in Asia (1915) ..	33,929,000
France	322,770,513	Algeria	33,763,786
Canada	300,863,074	Chile	23,660,532
India	250,469,284	French Morocco.. ..	17,466,144
Russia in Asia (1917) ..	230,406,000	Persia (1915)	15,510,400
Italy	192,838,286	Mexico (1920)	14,950,953
Argentine Republic	154,874,696	Belgium	14,495,294
Spain	145,151,302	Sweden	12,577,111
Australia (a)	129,083,806	Uruguay	12,125,421
Germany	107,799,402	Denmark	11,206,829
Rumania	75,591,668	Greece	11,170,085
United Kingdom	73,792,000	Tunis	10,622,604
Jugo-Slavia	51,700,833	New Zealand	10,565,275
Hungary	47,087,819	Union of South Africa ..	8,688,617
Bulgaria	42,509,790	Netherlands	8,685,748
Japan	37,625,523	Portugal	8,612,602
Egypt	37,010,764	Austria	6,451,988
Czecho-Slovakia	36,999,333	Switzerland	3,799,556

(a) Average yield for 10 years, 106,301,380.

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the International Institute of Agriculture, Rome, gives the following figures for the ten years 1909 to 1918 :—

WHEAT.—WORLD'S PRODUCTION, 1909 TO 1918.

Year.	1,000,000 bushels.	Year.	1,000,000 bushels.	Year.	1,000,000 bushels.
1909	3,575	1913.. .. .	4,035	1917.. .. .	3,243
1910	3,532	1914.. .. .	3,579	1918.. .. .	3,675
1911	3,525	1915.. .. .	4,270	Average for 10	
1912	3,810	1916.. .. .	3,301	years	3,655

The compilation of the world's production of wheat during the past few years has not been possible owing to the failure of certain countries, particularly Russia, to report their harvests. The Institute of Agriculture, Rome, has, however, obtained figures for all the producing countries, except Russia, and compared the average computed for the past three years with pre-war and war-time averages with the following results:—

WHEAT.—WORLD'S PRODUCTION, 1909-13 TO 1919-21.

Years.	Area.	Yield.	Yield per acre.
	Acres.	Bushels.	Bushels.
Average, 1909-1913	192,244,000	2,935,822,000	15.27
Average, 1914-1918	205,340,000	2,905,692,000	14.15
Average, 1919-1921	210,282,000	2,908,264,000	13.83

The most striking feature of the world's wheat position has been the expansion of the area cultivated followed by a decreased production, consequent upon the reduced yields obtained per acre. The decrease in the yields per acre was due to the fall in the European averages, and to the greater development of the extensive type of cereal cultivation in newer countries. The Australian contributions to the world's production during the past three years amount to $3\frac{1}{2}$ per cent.

3. Prices of Wheat.—(i) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of prime importance to the local producer. The table below gives the average prices per Imperial quarter realized for British-grown wheat.—

BRITISH WHEAT.—PRICES PER QUARTER, 1861 TO 1922.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ..	55 4	61 6	50 0	1916 ..	58 5	75 10	46 3
1871 ..	56 8	60 0	52 6	1917 ..	75 9	83 10	70 3
1881 ..	45 4	55 2	40 9	1918 ..	72 10	74 5	71 2
1891 ..	37 0	41 8	32 3	1919 ..	72 11	73 4	72 5
1901 ..	26 9	27 8	25 8	1920 ..	80 10	90 11	72 6
1911 ..	31 8	33 4	30 0	1921 ..	71 6	89 10	44 0
1915 ..	52 10	62 0	42 9	1922 ..	47 10	56 3	37 5

(ii) *Australian Export Values.* In the next table will be found a statement of the export values of Australian wheat during each of the last five years:—

AUSTRALIAN WHEAT.—EXPORT VALUES, 1917-18 TO 1921-22.

Heading.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	s. d.	s. d.	s. d.	s. d.	s. d.
Price per bushel	5 3	5 1	5 6	9 0	5 9

The export values here shown are the average declared values for the successive years at the several ports of shipment in Australia.

4. **Imports and Exports of Wheat and Flour.**—(i) *Quantities.* The table hereunder shows the imports, exports, and net exports of wheat and flour from 1917-18 to 1921-22. For the sake of convenience, flour has been expressed at its equivalent in wheat, 1 ton of flour being taken as equal to 50 bushels of grain. In ordinary seasons the Australian imports of wheat and flour are negligible. During the past five years the export ranged between 41,684,852 bushels in 1917-18 and 117,931,876 bushels in 1921-22, the net exports for the period averaging 84,995,232 bushels.

WHEAT AND FLOUR.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bushels. ^a	Bushels.	Bushels.	Eq. Bushels. ^a	Bushels.	
1917-18	20	1,050	1,070	22,981,772	18,704,150	41,685,922	41,684,852
1918-19	50	2,750	2,800	44,563,597	24,169,750	68,733,347	68,730,547
1919-20	285	4,300	4,585	82,470,658	25,889,700	108,360,358	108,355,773
1920-21	1,170	3,850	5,020	76,791,883	11,486,250	88,278,133	88,273,113
1921-22	247	1,800	2,047	99,947,223	17,986,700	117,933,923	117,931,876

(a) Equivalent in bushels of wheat.

(ii) *Destination of Exported Breadstuffs.* In the next two tables will be found a list of the principal countries to which Australia exported wheat and flour during each year of the period 1917-18 to 1921-22. The countries are as shown in the Australian Customs returns, but owing to the fact that in normal times wheat ships are frequently instructed to call for orders at various ports, the countries to which these ports belong cannot always be considered as the ultimate destination of the whole of the wheat said to be exported to them.

WHEAT.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
United Kingdom	5,309,162	9,104,560	50,074,725	38,709,680	40,914,035	144,112,162
France ..	5,074,098	674,363	13,010,455	8,921,645	3,341,835	31,022,396
Egypt ..	..	11,741,477	2,265,283	10,477,463	3,286,433	27,770,656
Italy ..	517,962	2,950,015	1,397,738	2,219,143	18,447,762	25,532,620
India ..	225,820	4,306,312	1,522,593	25,623	15,035,429	21,115,777
Japan ..	702,958	1,407,775	6,381,738	7,332	7,497,943	15,997,746
United States ..	6,593,878	3,510,762	73,293	112	..	10,178,045
Belgium ..	..	..	..	5,754,723	1,312,480	7,067,203
New Zealand ..	1,295,448	1,452,625	2,393,667	602,843	73,539	5,818,122
Germany ..	..	..	..	2,504,690	2,996,292	5,500,982
Union of South Africa ..	1,216,172	541,778	1,220,147	1,157,778	1,331,417	5,467,292
Canary Islands(a) ..	..	..	624,425	3,532,793	236,807	4,394,025
Norway ..	..	1,369,105	1,645,125	342,510	960,855	4,317,595
Netherlands ..	..	..	..	2,202,653	1,192,977	3,395,630
Sweden ..	..	2,134,500	523,065	..	..	2,657,565
Ceylon ..	392	2,142,212	52,645	303	257,098	2,452,650
Peru ..	340,965	660,318	131,023	..	697,205	1,829,511
Other Countries	1,704,917	2,567,795	1,154,736	332,592	2,365,116	8,125,156
Total - ..	22,981,772	44,563,597	82,470,658	76,791,883	99,947,223	326,755,133

(a) For orders.

The exports of flour during the same period and the principal countries of destination were as follows :—

FLOUR.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom	145,914	136,254	72,828	81,952	103,634	540,582
Egypt	13,994	129,992	92,537	61,502	108,550	406,575
Netherlands East Indies ..	20,017	34,929	42,070	15,388	41,826	154,230
Straits Settlements ..	23,609	24,386	63,508	8,264	20,471	140,238
Union of South Africa ..	7,330	12,892	39,513	41,458	24,947	126,140
Philippine Islands ..	35,158	27,180	39,942	3,040	10,749	116,069
Hong Kong	3,604	17,898	36,506	368	10,003	68,379
France	32,597	..	33,407	..	..	66,004
United States	54,889	3,865	..	..	..	58,754
Italy	6,099	35,804	..	..	..	41,903
Japan	3,702	1,258	24,876	480	6,555	36,871
India .. ..	..	23,629	486	4	657	24,776
New Caledonia	3,314	3,804	3,999	3,202	3,532	17,851
Mauritius .. ..	..	1,968	4,532	3,320	5,639	15,459
Ceylon .. ..	..	47	8,191	755	6,282	15,275
Fiji	2,280	2,212	2,257	1,362	2,484	10,595
China	923	880	1,199	77	4,391	7,470
New Zealand	5,736	511	256	137	95	6,735
Portuguese East Africa ..	..	..	632	2,477	3,542	6,651
Papua	350	429	879	636	322	2,616
Other Countries	14,567	25,457	50,176	5,303	6,055	101,558
Total	374,083	483,395	517,794	229,725	359,734	1,964,731

For the five years under review the export of wheat to the United Kingdom amounted to 144,112,162 bushels, or 44 per cent. of the total export for the period, while the export of flour to the United Kingdom aggregated 540,582 tons, or 27½ per cent. of the total export. During the quinquennium the heaviest exports of flour have been to the United Kingdom, Egypt, Netherlands East Indies, Straits Settlements, South Africa, the Philippine Islands, and France.

(iii) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of wheat exported in the form of flour during the past five years represents, on the average, about 23 per cent. of the total equivalent in wheat exported as wheat or flour from Australia.

A point of some interest in connexion with the export of wheat, and one which bears also on the proportion of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from Australia, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., &c.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows :—

Flour	0.32 per cent., or	0.13 lb. per bushel.
Bran	3.00 ..	0.27 ..
Pollard	0.90 ..	0.08 ..

The total amount of phosphoric acid contained in a bushel of wheat, is, therefore, 0.48 lb., of which 0.13 lb. is in the flour and 0.35 lb. in the offal.

During the last ten years the net exports from Australia of wheat and its milled products have amounted to 483,133,225 bushels of wheat, 2,844,610 tons of flour, and 3,072,295 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 252,505,842 lbs. of phosphoric acid, the value of which as a fertilizer would amount to more than one million pounds sterling.

5. **Local Consumption of Wheat.**—The estimated consumption of wheat for food and for seed purposes in Australia during the past ten years is given in the following tables:—

WHEAT.—HUMAN CONSUMPTION, AUSTRALIA, 1913 TO 1921-22.

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exported.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Bushels.	Tons.	Bushels.
1913 ..	760,613	221,605	2,600	536,408	26,820,400	.1096	5.480
1914 ..	713,845	174,180	2,400	537,265	26,863,250	.1081	5.405
1915 ..	541,810	7,633	2,160	532,017	26,600,850	.1070	5.350
1915-16 ..	577,038	146,618	2,650	427,770	21,388,500	.0861	4.305
1916-17 ..	869,975	290,572	2,885	576,518	28,825,900	.1172	5.860
1917-18 ..	985,761	374,062	9,810	601,889	30,094,450	.1208	6.040
1918-19 ..	1,046,268	483,340	6,437	556,491	27,824,550	.1095	5.475
1919-20 ..	1,050,228	517,708	4,590	527,930	26,396,500	.0995	4.975
1920-21 ..	801,511	229,648	3,375	568,488	28,424,400	.1050	5.250
1921-22 ..	911,452	359,698	2,284	549,470	27,473,500	.0997	4.986
Aggregate 10 years	8,258,501	2,805,064	39,191	5,414,246	270,712,300	.1066	5.330

WHEAT USED FOR SEED.—AUSTRALIA, 1912 TO 1921.

Year.	Area for Grain and Hay.	Wheat for Seed Purposes.		
		Quantity.	Per Acre.	Per Head of Population.
	Acres.	Bushels.	Bushels.	Bushels.
1912	9,112,676	8,484,000	.931	1.787
1913	10,661,430	9,747,000	.914	1.992
1914	11,012,679	10,059,000	.913	2.023
1915	14,414,024	13,041,000	.905	2.624
1916	12,894,917	11,523,000	.894	2.343
1917	10,910,669	9,713,000	.890	1.949
1918	9,428,398	9,054,000	.960	1.782
1919	8,250,572	7,774,000	.942	1.466
1920	10,271,055	9,471,000	.922	1.750
1921	10,878,401	10,077,000	.926	1.847
Aggregate for 10 years ..	107,834,821	98,943,000	.918	1.966

In addition to the above, the quantity of grain fed to poultry and other live stock must be taken into consideration. This varies from year to year according to the price of wheat and from other causes, and data are not available on which to base an estimate of actual quantity so consumed. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks. In some years the flour available per head of population, after deducting net exports from quantity milled, shows a substantial increase over the average for the previous year, this, however, being counter-balanced by a decline in the following year. The average quantity of flour consumed

per annum for the ten years under consideration was 0.1066 tons per head of population, which, when expressed in equivalent terms in wheat, represents 5.330 bushels. The estimates of quantity of grain used for seed purposes are based on data supplied by the Agricultural and Statistical Departments of the several States giving average quantities of seed used per acre for wheat sown either for grain or hay. The average annual quantity thus used during the ten years was 1.966 bushels per head of population, and 0.918 bushels or 55 lbs. per acre sown.

6. Value of the Wheat Crop.—The estimated value of the wheat crop in each State and in Australia during the season 1921–22 is shown below :—

WHEAT.—VALUE OF CROP, (a) 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value..	11,758,830	12,337,761	857,306	6,288,520	3,765,862	144,293	2,090	35,154,664
Value per acre ..	£3/13/7	£4/14/6	£5/4/1	£2/12/9	£2/16/4	£5/3/1	£3/17/3	£3/12/4

(a) Exclusive of the value of straw.

7. Voluntary Wheat Pools.—Reference to the operations of the Voluntary Wheat Pools in the various States during 1922–23 will be found in the Appendix at the end of this volume

§ 5. Oats.

1. Progress of Cultivation.—(i) *Area and Yield.* Oats came next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for 63.29 per cent., oats represented only 4.77 per cent. of the area under crop in Australia. The progress of cultivation of oats for the last five years is shown in the table hereunder, and more fully in the graphs hereinafter :—

OATS.—AREA AND YIELD, 1917–18 TO 1921–22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
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AREA.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917–18	82,512	293,214	3,002	106,556	95,666	34,771	79	615,800
1918–19	86,421	342,867	298	160,823	141,459	36,231	53	768,152
1919–20	75,893	559,547	363	192,153	191,931	48,185	224	1,068,296
1920–21	77,537	443,636	4,690	167,001	193,486	50,474	172	936,996
1921–22	69,619	318,681	2,274	125,148	162,866	54,642	176	733,406

YIELD.

	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917–18	1,452,144	6,141,287	44,688	1,248,529	908,592	589,224	2,967	10,387,431
1918–19	1,272,411	5,274,984	3,632	1,540,603	1,499,689	848,420	1,341	10,441,080
1919–20	583,503	6,603,067	2,871	1,634,239	2,486,918	1,242,258	3,255	12,556,111
1920–21	1,640,552	10,907,191	103,933	2,331,067	2,022,031	1,514,155	2,148	18,521,077
1921–22	1,168,406	6,082,258	34,409	1,297,646	2,019,603	1,543,617	1,494	12,147,433

The principal oat-growing State is Victoria, which during the past five seasons produced 55 per cent. of the total quantity of oats grown in Australia; Western Australia, South Australia, New South Wales and Tasmania came next in order of importance. In New South Wales and Tasmania, the highest production of oats for any season was that of 1909-10, while Victoria experienced its maximum yield in 1903-4, South Australia in 1920-21, Queensland in 1916-17, and Western Australia in 1919-20. For Australia as a whole, the record yield was that of 18,521,077 bushels in the season 1920-21, while the yields of 17,541,210 and 16,538,979 for 1903-4 and 1915-16 respectively rank second and third.

(ii) *Average Yield.* The average yield per acre of oats varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the last five seasons, and for the decennium 1912-22 are given in the succeeding table :—

OATS.—AVERAGE YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Aus- tralia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18	17.60	20.94	14.89	11.72	9.50	16.95	37.56	16.87
1918-19	14.72	15.38	12.19	9.58	10.60	23.42	25.30	13.59
1919-20	7.71	11.80	7.91	8.50	12.96	25.78	14.53	11.75
1920-21	21.16	24.59	22.16	13.96	10.45	30.00	12.49	19.77
1921-22	16.78	19.09	15.13	10.37	12.40	28.25	8.49	16.56
Average for 10 seasons 1912-22	16.76	17.56	16.90	10.58	11.97	26.36	16.88	15.90

The smallest average yield per acre ever recorded for Australia was that experienced in the abnormally dry season 1914-15, viz., 5.60 bushels, while the largest in the past ten years was that of the season 1915-16, amounting to 22.92 bushels per acre.

(iii) *Relation to Population.* The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing about 5.45 bushels per head during the last five years under review, as compared with 2.43 bushels per head for Australia as a whole. Particulars for the seasons 1917-18 to 1921-22 are furnished in the succeeding table :—

OATS.—YIELD PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Aus- tralia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18	756	4,333	64	2,794	2,964	2,975	1,410	2,085
1918-19	649	3,670	5	3,366	4,841	4,181	601	2,055
1919-20	286	4,393	4	3,393	7,595	5,917	1,696	2,367
1920-21	785	7,138	138	4,746	6,112	7,114	1,089	3,422
1921-22	549	3,922	45	2,582	6,026	7,067	724	2,205

2. *Comparison with Other Countries.*—(i) *Total Production.* A comparison of the Australian production of oats with that of the leading oat-producing countries of the world is furnished in the following table :—

OATS.—PRODUCTION IN VARIOUS COUNTRIES, 1921.

Country.	Quantity of Oats Produced.	Country.	Quantity of Oats Produced.	Country.	Quantity of Oats Produced.
	Bushels.		Bushels.		Bushels.
United States..	848,592,715	Czecho-Slova-		Austria ..	15,020,445
Russia in Europe		kia ..	57,881,720	Jugo-Slavia	14,727,660
(1916) ..	674,593,686	Rumania ..	49,667,351	Latvia ..	13,474,111
Canada ..	362,294,800	Denmark ..	41,612,278	Australia ..	12,147,433
Germany ..	275,852,641	Italy ..	30,219,883	Norway ..	10,370,083
France ..	196,166,892	Spain ..	28,492,941	Japan ..	9,668,671
United Kingdom	160,547,008	Belgium ..	28,180,132	Bulgaria ..	9,017,298
Poland ..	119,831,709	Argentine Rep.	26,372,815	Algeria ..	8,267,340
Russia in Asia		Finland ..	22,423,176	New Zealand	6,752,663
(1915) ..	91,585,207	Netherlands	17,030,908	Union of South	
Sweden ..	61,279,067	Hungary ..	16,112,120	Africa	6,482,267

(ii) *Yield per Acre.* The average yield per acre of oats is very low in Australia compared with other countries, where its cultivation is more extensive. Arranging the countries contained in the foregoing table according to the magnitude of average yield for the years specified, the results are as follows:—

OATS.—YIELD PER ACRE, VARIOUS COUNTRIES, 1921.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Belgium ..	46.7	Czecho-Slovakia	28.9	Spain ..	18.1
Netherlands ..	45.1	Italy ..	25.2	Australia ..	16.6
New Zealand ..	39.6	Poland ..	25.0	Rumania ..	16.2
Denmark ..	37.4	France ..	23.6	Algeria ..	14.8
United Kingdom..	36.4	Austria ..	22.6	Jugo-Slavia ..	14.4
Germany ..	35.3	Bulgaria ..	22.1	Russia in Asia	
Sweden ..	34.9	Finland ..	21.6	(1915) ..	13.9
Russia in Europe		Latvia ..	21.6	Argentine Rep.	12.5
(1916) ..	32.1	Canada ..	21.4	Union of South	
Japan ..	31.7	Hungary ..	20.0	Africa ..	12.2
Norway ..	30.33	United States ..	18.9		

3. *Price of Oats.*—The average wholesale prices of oats in the markets of the several capitals for the year 1921 are given in the following table:—

OATS.—AVERAGE WHOLESALE PRICES, 1921.

Particulars.	Sydney.(a)	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	3 9	2 7	2 8	2 2	3 4	3 0

(a) Year ended 30th June, 1922.

4. **Imports and Exports.**—The production of oats in Australia has not yet reached sufficient proportions to admit of a regular export trade; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, 1908, 1910, and in each of the four years prior to 1916–17. The quantities and values of oats imported into and exported from Australia during the years 1917–18 to 1921–22 are given hereunder:—

OATS.—IMPORTS AND EXPORTS, AUSTRALIA, 1917–18 TO 1921–22.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1917–18 ..	838	219	368,113	53,809	367,275	53,590
1918–19 ..	41,728	9,713	149,413	35,326	107,685	25,613
1919–20 ..	146,700	41,759	290,323	83,175	143,623	41,416
1920–21 ..	139,728	30,057	865,588	143,874	725,860	113,817
1921–22 ..	14,880	2,569	325,792	49,980	310,912	47,411

The principal country from which imports of oats have been obtained is New Zealand, while the principal countries to which oats were exported during the period under review were New Zealand, Java, and the United Kingdom.

5. **Oatmeal, etc.**—Oatmeal, etc., is imported into Australia principally from the United Kingdom, the United States of America, and New Zealand. The total importations of oatmeal, wheatmeal, and rolled oats during 1921–22 amounted to 108,357 lbs., and represented a value of £2,393, while the exports amounted to 383,171 lbs., valued at £5,589, and were shipped mainly to Papua, New Zealand, India, and Netherlands East Indies.

6. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of Australia for the season 1921–22 is as follows:—

OATS.—VALUE OF CROP, (a) 1921–22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£
Aggregate value ..	238,350	1,013,710	4,444	189,236	323,978	237,974	300	2,007,992
Value per acre ..	£3/8/6	£3/3/7	£1/19/1	£1/10/3	£1/19/9	£4/7/1	£1/14/1	£2/14/9

(a) Exclusive of the value of straw.

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1921–22 being 281,721 acres, or 92 per cent. of the total for Australia. Of the balance, Victoria contributed 23,227 acres, South Australia 186 acres, Western Australia 43 acres, and the Northern Territory 9 acres. The climate of Tasmania prevents the growing of maize for grain. In South Australia, prior to 1908, particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States, maize is grown to a greater or less extent as green forage, particularly in connexion with the dairying industry.

2. **Progress of Maize-growing.**—(i) *Area and Yield.* The area and yield of maize for grain in each State are given in the following table for the last five years. The fluctuations from year to year are shown more fully on the graph hereinafter.

The total area under maize in Australia exceeded 400,000 acres on only one occasion, and that as far back as 1910-11. From that year to 1917-18 the acreage remained practically constant at about 335,000 acres, from which it receded to 265,469 acres in 1919-20. Increases during the past two years raised the total acreage to 305,186 in 1921-22.

MAIZE.—AREA AND YIELD, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Nor. Ter.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18	145,733	20,987	165,124	70	97	25	21	332,057
1918-19	114,582	22,559	149,505	112	39	15	..	286,812
1919-20	136,509	23,474	105,260	165	11	50	..	265,469
1920-21	144,105	24,149	115,805	199	19	6	..	284,283
1921-22	146,687	23,227	135,034	186	43	9	..	305,186

YIELD.								
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18	3,499,531	1,152,787	4,188,586	796	701	432	429	8,843,262
1918-19	2,091,921	711,679	4,105,974	1,756	623	200	..	6,912,153
1919-20	4,052,025	878,922	1,830,664	1,810	84	500	..	6,764,005
1920-21	4,176,000	1,065,880	2,012,864	3,738	240	60	..	7,258,782
1921-22	3,976,300	951,960	2,907,754	3,792	540	92	..	7,840,438

The maximum production of maize in Australia was recorded in 1910-11, when the harvest exceeded 13,000,000 bushels. This figure has not been approached in recent years, the average for the past decade amounting to only 8,000,000 bushels.

(ii) *Average Yield.* The following table gives particulars of the average yield per acre of the maize crops of the States for the seasons 1917-18 to 1921-22, and also for the decennium 1912-22 :—

MAIZE.—AVERAGE YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18	24.01	54.93	25.37	11.37	7.23	17.28	20.43	26.63
1918-19	18.26	31.55	27.46	15.68	15.97	13.33	..	24.10
1919-20	29.68	37.44	17.39	10.97	7.64	10.00	..	25.48
1920-21	28.98	44.14	17.38	18.78	12.63	10.00	..	25.53
1921-22	27.11	40.99	21.53	20.39	12.56	10.22	..	25.69
Average for 10 seasons 1912-22	26.22	43.61	21.22	15.71	12.50	16.59	16.07	25.10

The very high average yield in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts peculiarly suited to its growth. The average yield in New South Wales is appreciably higher than that obtained in Queensland.

(iii) *Relation to Population.* During the past five seasons the Australian production of maize has averaged $1\frac{1}{2}$ bushels per head of population, while the average for Queensland, the State in which the production per head is highest, amounted to $4\frac{1}{8}$ bushels. Details for the several States during the past five seasons are as follows :—

MAIZE.—YIELD PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Fed. Cap. Ter.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18 ..	1,823	813	6,091	2	2	90	204	1,775
1918-19 ..	1,067	495	5,820	4	2	43	..	1,360
1919-20 ..	1,988	585	2,482	4	..	110	..	1,275
1920-21 ..	1,997	697	2,676	8	1	15	..	1,341
1921-22 ..	1,869	614	3,776	8	2	25	..	1,423

3. *Australian and Foreign Maize Production.*—(i) *Total Yield.* The United States of America is the most important maize-producing country of the world. About 100,000,000 acres are planted each year, and the yield represents about 74 per cent. of the world's production. Of the huge quantities raised in that country, more than 85 per cent. is fed to live stock on farms, while 10 per cent. is used for human food, and only a very small fraction, about $1\frac{1}{2}$ per cent., enters into international trade. The yields of the various countries are as follow :—

MAIZE.—PRODUCTION IN VARIOUS COUNTRIES, 1921.

Country.	Production of Maize.	Country.	Production of Maize.
	Bushels.		Bushels.
United States ..	3,081,233,095	Philippine Islands ..	18,107,741
Argentine Republic ..	230,422,660	Russia in Asia (1917) ..	17,428,279
Rumania ..	107,694,618	Canada ..	14,903,913
Italy ..	94,483,920	France ..	12,202,598
India (British) (1920) ..	78,840,084	Portugal ..	11,720,695
Mexico (1918) ..	75,985,594	Czecho-Slovakia ..	10,500,888
Jugo-Slavia ..	74,521,578	Greece ..	7,873,660
Egypt ..	70,568,749	Australia ..	7,840,438
Russia in Europe (1917) ..	67,136,860	Uruguay (1920) ..	4,721,917
Union of South Africa ..	43,103,387	Guatemala ..	4,344,056
Bulgaria ..	34,385,883	Japan (1919) ..	4,033,676
Hungary ..	27,142,297	French Morocco ..	3,725,470
Spain ..	24,897,584	Austria ..	2,455,716

(ii) *Yield per Acre.* The average yield per acre of maize in Australia during 1921 was 25.7 bushels, which may be regarded as satisfactory when compared with those of other maize-producing countries, the yields per acre for which are shown in the following table :—

MAIZE.—YIELD PER ACRE IN VARIOUS COUNTRIES, 1921.

Country.	Average Yield per Acre.	Country.	Average Yield per Acre.
	Bushels.		Bushels.
Canada	50.2	Spain	21.1
Egypt	36.4	Mexico (1918)	19.1
Russia in Asia (1917) ..	30.0	Greece	16.0
United States of America ..	29.7	Portugal	16.0
Japan (1919)	29.1	Jugo-Slavia	15.8
Czecho-Slovakia	29.0	France	15.1
Argentine Republic	28.5	Philippine Islands	13.6
Russia in Europe (1917) ..	28.3	Hungary	13.5
Australia (a)	25.7	Rumania	12.7
Italy	25.5	Union of South Africa ..	12.3
Bulgaria	24.3	India (1920)	10.9
Austria	21.9	French Morocco	9.9

(a) Average yield for 10 years, 25.1 bushels.

4. **Price of Maize.**—The average wholesale price of maize in the Sydney market for each of the last five years is given in the following table:—

MAIZE.—AVERAGE PRICE, SYDNEY, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel ..	4 8½	6 11½	8 11	6 6	5 2

5. **Oversea Imports and Exports.**—The Australian oversea trade in maize is practically insignificant, any importation or exportation depending solely on the success or failure of the local crop. During the past five years, owing to droughty conditions, the average annual import amounted to 112,000 bushels. Details of imports and exports for the years 1917-18 to 1921-22 are as follow:—

MAIZE.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1917-18	3,227	770	128,988	29,069	— 125,761	— 28,299
1918-19	255,605	73,774	84,119	20,804	171,486	52,970
1919-20	494,278	158,361	6,632	3,001	487,646	155,360
1920-21	96,536	40,097	77,489	27,162	19,047	12,935
1921-22	45,066	9,791	36,320	9,023	8,746	768

NOTE.—The minus sign — signifies net exports.

The principal countries to which maize is exported from Australia are New Zealand and the Pacific Islands, while the principal countries from which imports arrive are South Africa, Java, and the Pacific Islands.

6. Prepared Maize.—A small quantity of corn-flour is imported annually into Australia, the principal countries of supply being the United Kingdom and the United States of America. During the year 1921–22 the imports amounted to 783,382 lbs., and represented a value of £9,375. The exports from Australia are small, and reached only 61,661 lbs., valued at £1,390 in 1921–22.

7. Value of Maize Crop.—The value of the Australian maize crop for the season 1921–22 has been estimated at £1,977,986, made up as follows :—

MAIZE.—VALUE OF CROP, 1921–22.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	N. Ter.	Australia.
	£	£	£	£	£	£	£
Aggregate value ..	1,060,480	261,789	654,245	1,232	207	33	1,977,986
Value per acre ..	£7/4/7	£11/5/5	£4/16/11	£6/12/6	£4/16/3	£3/13/4	£6/9/7

§ 7. Barley.

1. Progress of Cultivation.—(i) *Area and Yield.* The area under barley in Australia has fluctuated very considerably, but results for the past ten years show a marked rise. The average annual area sown for the quinquennium 1917 to 1921 amounted to 272,141 acres, which was more than double the acreage from 1906 to 1911, *i.e.*, 127,849 acres. Victoria was originally the principal barley-growing State, but the rapid expansion of the cultivation of this crop in South Australia during recent years brought the latter State into the lead in 1913–14, and, though a decline occurred in 1921–22, the area under barley in South Australia accounted for 57 per cent. of the Australian acreage; Victoria was next in importance with 33 per cent., leaving a small margin of about 9 per cent. to be distributed among the other States. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area and yield of barley for grain in the several States are shown in the following table for the last five years, while the progress since 1850 is illustrated in the graphs hereinafter :—

BARLEY.—AREA AND YIELD, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
AREA.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917–18 ..	6,370	84,931	7,702	95,654	5,028	5,185	204,870
1918–19 ..	7,980	100,198	1,316	130,357	7,982	7,036	254,869
1919–20 ..	5,354	85,323	3,275	157,897	9,167	6,293	267,309
1920–21 ..	5,969	93,954	15,908	202,079	10,686	6,151	334,747
1921–22 ..	5,031	100,127	7,730	170,887	7,894	7,241	298,910
YIELD.							
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917–18 ..	97,824	1,970,650	143,574	1,651,036	35,761	98,013	3,996,858
1918–19 ..	86,313	2,028,635	8,824	2,417,349	81,451	141,149	4,763,721
1919–20 ..	38,892	1,528,654	34,892	2,448,936	116,037	120,516	4,287,927
1920–21 ..	123,290	2,495,762	317,511	3,946,062	111,405	161,346	7,155,376
1921–22 ..	83,950	2,336,246	133,885	3,278,787	85,857	166,960	6,085,685

The only States where the annual production of barley averaged over 1,000,000 bushels for the past decade were South Australia and Victoria, the yields being respectively 2,027,302 and 1,805,226 bushels, the higher return in the latter State tending to diminish the advantage held by South Australia in regard to acreage.

(ii) *Malting and other Barley.* (a) *Year 1921-22.* In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the season 1921-22 are as follows:—

BARLEY, MALTING AND OTHER.—AREA AND YIELD, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley..	3,569	47,686	5,558	151,257	4,120	6,472	218,662
Other barley ..	1,462	52,441	2,172	19,630	3,774	769	80,248
Total ..	5,031	100,127	7,730	170,887	7,894	7,241	298,910
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Malting barley..	57,030	1,103,039	93,567	2,981,004	48,219	147,740	4,430,599
Other barley ..	26,920	1,233,207	40,318	297,783	37,638	19,220	1,655,086
Total ..	83,950	2,336,246	133,885	3,278,787	85,857	166,960	6,085,685

The cultivation of malting barley is a special industry due to the demands of the local brewing trade. Its expansion, however, appears to be restricted to home requirements, although of late years the exports have increased. Taking Australia as a whole, more than 73 per cent. of the area under barley in 1921-22 was sown with the malting variety. The proportion varies considerably in the several States.

(b) *Progress of Cultivation.* The following table sets out the acreage and yield of malting and other barley in Australia as a whole during the past five seasons:—

BARLEY, MALTING AND OTHER.—AREA AND YIELD, AUSTRALIA, 1917-18 TO 1921-22.

Season.	Acres.			Bushels.			Average Bushels per Acre.		
	Malting.	Other.	Total.	Malting.	Other.	Total.	Malting.	Other.	Total.
1917-18 ..	136,785	68,085	204,870	2,602,449	1,394,409	3,996,858	19.03	20.48	19.51
1918-19 ..	179,186	75,683	254,869	3,419,863	1,343,858	4,763,721	19.09	17.76	18.69
1919-20 ..	204,752	62,557	267,309	3,352,027	935,900	4,287,927	16.37	14.96	16.04
1920-21 ..	249,008	84,839	334,747	5,248,861	1,906,515	7,155,376	21.00	22.47	21.38
1921-22 ..	218,662	80,248	298,910	4,430,599	1,655,086	6,085,685	20.26	20.62	20.36
Average 10 seasons									
1912-22	162,711	69,097	231,808	3,046,573	1,281,433	4,328,006	18.72	18.55	18.67

During the past ten seasons the area and production of malting barley have represented more than twice the corresponding figures for other barley. The average yield per acre differs very little in respect of the two classes of barley, malting obtaining a slight average advantage of 0.17 bushels per acre during the last ten years.

(iii) *Average Yield.* The average yield of barley per acre varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia. Details for each State during the past five seasons, and for the decennium 1912-22, are given in the following table :—

BARLEY.—YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18	15.36	23.20	18.64	17.26	7.11	18.90	19.51
1918-19	10.82	20.25	6.71	18.54	10.20	20.06	18.69
1919-20	7.26	17.92	10.65	15.51	12.66	19.15	16.04
1920-21	20.66	26.56	19.96	19.53	10.43	26.23	21.38
1921-22	16.69	23.33	17.32	19.19	10.88	23.06	20.36
Average for 10 seasons 1912-22	14.86	21.58	16.78	17.31	11.40	22.55	18.67

(iv) *Relation to Population.* During the last five seasons the quantity of barley produced in Australia averaged nearly 1 bushel per head of population. For the season 1921-22 the production ranged from 6½ bushels per head in South Australia to 3 lbs. per head in New South Wales. Details for the years 1917-18 to 1921-22 are as follows :—

BARLEY.—PRODUCTION PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

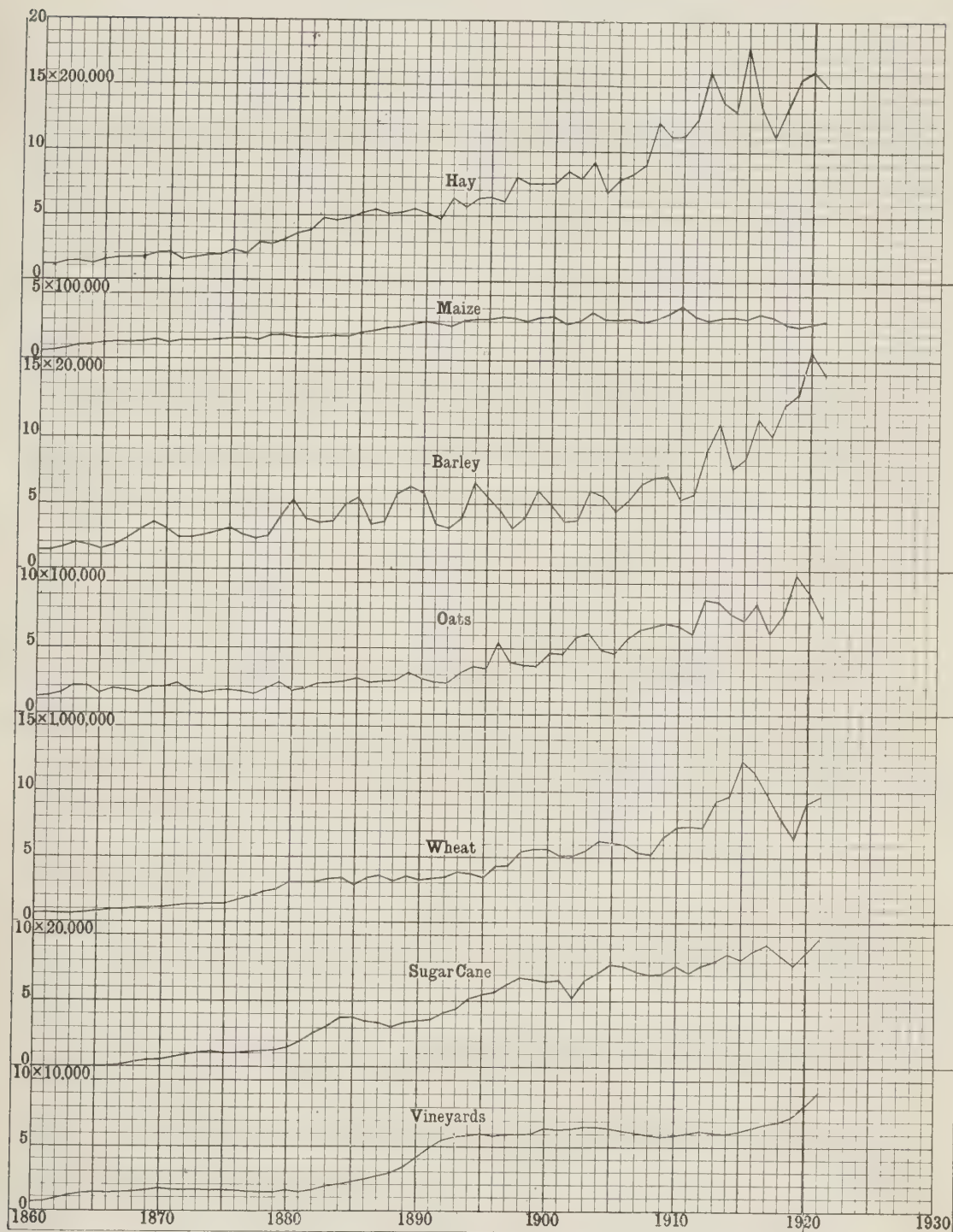
Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1917-18	51	1,390	209	3,695	117	495	802
1918-19	44	1,411	13	5,282	263	696	937
1919-20	19	1,017	47	5,085	354	574	808
1920-21	59	1,633	422	8,034	337	758	1,322
1921-22	39	1,506	174	6,524	256	764	1,104

2. *Comparison with Other Countries.*—(i) *Total Yield.* In comparison with the barley production of other countries, that of Australia appears extremely small. Particulars for some of the leading countries for the year 1921 are as follows, the Australian figure being added for the purpose of comparison :—

BARLEY.—PRODUCTION IN VARIOUS COUNTRIES, 1921.

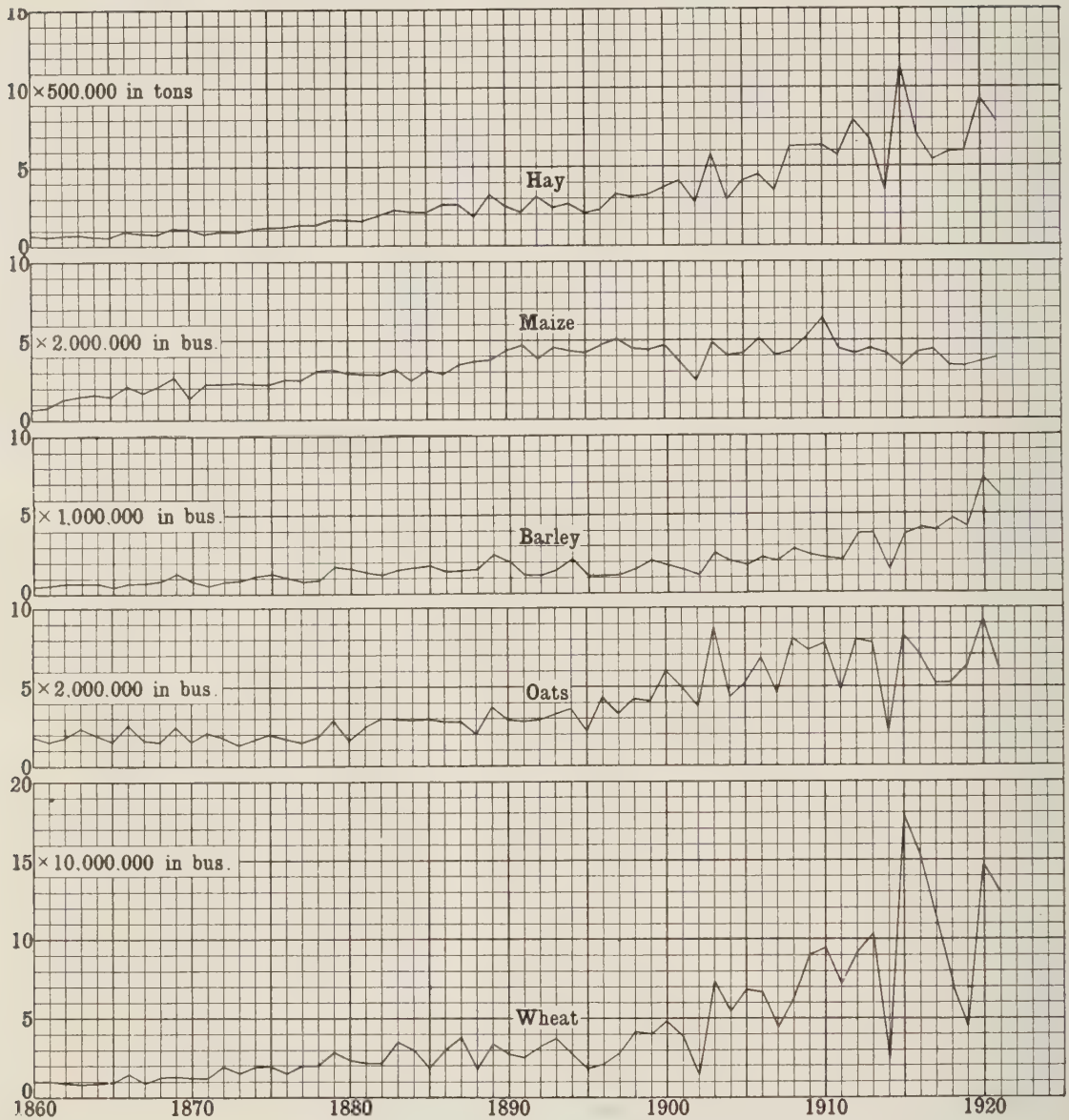
Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russia in Europe (1916) ..	336,213,042	Jugo-Slavia	12,742,765
United States	145,130,695	Bulgaria	12,711,129
British India	112,358,278	Sweden	11,832,681
Spain	85,747,623	Egypt	11,463,636
Germany	85,494,943	Tunis	11,023,100
Japan	84,367,765	Argentina	10,714,453
Canada	57,319,525	Italy	9,947,245
United Kingdom	54,097,411	Greece	6,172,936
Poland	51,173,569	Australia	6,085,685
Rumania	47,427,827	Austria	4,992,732
Algeria	46,297,020	Belgium	4,912,572
Czecho-Slovakia	45,470,067	Finland	4,741,520
France	36,291,969	Chile	4,328,599
Russia in Asia (1915) ..	35,451,753	Norway	4,107,974
French Morocco	28,329,680	Netherlands	3,504,799
Denmark	26,234,978	Union of South Africa ..	1,230,385
Hungary	19,768,193	New Zealand	1,151,313

AREA UNDER PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1921-22.



EXPLANATION.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left of the graph. The height of each curve above its base line denotes, for the crop to which it relates, the total area under cultivation in Australia during the successive seasons.

PRODUCTION OF PRINCIPAL CROPS—AUSTRALIA, 1860 TO 1921-22.



EXPLANATION.—A separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of wheat, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 1,000,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each curve above its base line denotes the aggregate yield in Australia of the particular crop during the successive seasons.

(ii) *Yield per Acre.* The following table shows the average yield of barley per acre in various countries of the world, the return ranging from 56½ bushels in Netherlands to 9 bushels in Tunis :—

BARLEY.—AVERAGE YIELD PER ACRE IN VARIOUS COUNTRIES, 1921.

Country.	Average yield per Acre.	Country.	Average yield per Acre.
	Bushels.		Bushels.
Netherlands	56.8	United States	20.0
Belgium	51.3	Spain	19.8
Denmark	41.2	Austria	18.7
New Zealand	34.8	Algeria	18.5
Chile	33.9	Italy	18.4
Germany	30.4	Russia in Asia (1916) ..	16.9
United Kingdom	30.4	Hungary	16.7
Sweden	29.6	Argentine Republic ..	16.1
Egypt	29.1	Finland	16.0
Japan	28.8	India	15.6
Czecho Slovakia	28.7	Russia in Europe (1916) ..	15.3
Norway	26.4	French Morocco	14.9
Bulgaria	23.1	Union of South Africa ..	14.1
Poland	21.1	Jugo-Savia	13.8
France	21.0	Rumania	12.2
Canada	20.5	Greece	10.6
Australia	20.4	Tunis	9.0

3. *Price of Barley.*—The average price of barley in the Melbourne market during each of the past five years is given in the following table :—

BARLEY.—AVERAGE MELBOURNE PRICE PER BUSHEL, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	4 4½	5 9	5 9½	7 3	4 5
Cape barley	3 1½	4 0	4 6½	6 3	3 5

4. *Imports and Exports.*—Although the Australian oversea trade in barley is not large, a substantial rise in the volume of exports has taken place during the past three years. Occasionally the occurrence of drought renders a fairly large importation necessary, but during the past five years the average annual exports exceeded the imports by 1,334,348 bushels. Particulars of the Australian overseas imports and exports for the years 1917–18 to 1921–22 are contained in the following table :—

BARLEY.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1917–18	34	8	282,252	64,703	282,218	64,695
1918–19	456	203	176,478	49,573	176,022	49,370
1919–20	438	236	1,075,446	364,809	1,075,008	364,573
1920–21	20	45	3,209,734	778,615	3,209,714	778,570
1921–22	7,052	1,891	1,935,830	396,883	1,928,778	394,992

During some years there is an export of Australian pearl and Scotch barley, the total for 1921-22 reaching 311,261 lbs., valued at £3,128. The trade for the year was mainly with the South African Union and India.

5. Imports and Exports of Malt.—In pre-war times the imports of malt into Australia were fairly extensive, the supply being obtained principally from the United Kingdom. Since the outbreak of the war in 1914, however, imports have continuously declined, and in 1917-18 and 1920-21 large quantities were exported to South Africa and Japan. Details of imports and exports for the years 1917-18 to 1921-22 are given hereunder :—

MALT.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1917-18	35	106	117,075	47,626	117,040	47,520
1918-19	..	1	..	..	..	—
1919-20	..	..	..	..	..	..
1920-21	5	8	139,908	80,575	139,903	80,567
1921-22	40	43	7,553	3,238	7,513	3,195

NOTE.—The minus sign — signifies net imports.

6. Value of Barley Crop.—The estimated value of the barley crop of Australia for the seasons 1917-18 to 1921-22 was £834,075, £1,221,863, £1,360,411, £1,522,915, and £1,139,736. The extent to which the several States have contributed to the total in 1921-22 is shown in the following table :—

BARLEY.—VALUE OF CROP (a), 1921-22.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
Total value	£19,160	£434,792	£20,245	£613,455	£18,692	£33,392	£1,139,736
Value per acre	£3/16/2	£4/6/10	£2/12/5	£3/11/10	£2/7/4	£4/12/3	£3/16/3

(a) Exclusive of the value of straw.

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only other grain and pulse crops extensively grown in Australia are beans, peas, and rye. The total area under the two former crops for the season 1921-22 was 37,516 acres, giving a yield of 688,302 bushels, or an average of 18.35 bushels per acre, being greater than the average yield for the decennium ended 1921-22, which was 16.08 bushels per acre. The States in which the

greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in Australia during the season 1921-22 was 3,950 acres, yielding 47,023 bushels, and giving an average of 11.90 bushels per acre. This was higher than the average for the past ten seasons, which was 11.17 bushels per acre. Over 32 per cent. of the rye grown during the season was produced in New South Wales, and 31 per cent. in Victoria. In addition to these grain crops a small area of rice has for some years been cultivated in Queensland and the Northern Territory. The results obtained, however, have not up to the present been very satisfactory. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Queensland and Western Australia, and in the Northern Territory, will be found well suited to its cultivation.

§ 9. Potatoes.

1. **Progress of Cultivation.**—(i) *Area and Yield.* The principal potato-growing State is Victoria, which possesses peculiar advantages for the growth of the tuber. The rainfall is generally satisfactory, while the atmosphere is sufficiently dry to be unfavourable to the spread of Irish blight, consequently potatoes are grown in nearly every district except in the wheat belt. Tasmania comes next in order of importance, followed by New South Wales.

The area and production of potatoes in each State during the last five years are given hereunder :—

POTATOES—AREA AND YIELD, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
AREA.								
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	22,558	66,966	10,738	4,164	4,484	27,309	22	136,241
1918-19 ..	20,877	51,620	6,434	3,275	3,936	25,023	2	111,169
1919-20 ..	20,036	53,918	4,432	3,411	3,585	28,511	7	113,900
1920-21 ..	27,667	62,687	8,770	4,811	4,254	32,000	6	140,195
1921-22 ..	29,491	63,895	9,553	5,795	3,612	36,795	3	149,144
YIELD.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18 ..	49,934	182,195	22,139	11,315	11,320	70,442	50	347,395
1918-19 ..	30,353	137,533	11,083	13,219	11,697	56,528	3	260,416
1919-20 ..	49,962	145,888	7,844	11,020	13,240	66,225	24	294,203
1920-21 ..	63,234	171,628	19,068	17,057	13,368	88,679	22	373,056
1921-22 ..	57,825	173,660	16,794	18,573	13,605	107,624	10	388,091

(a) Includes 2 acres in Northern Territory.

The production of potatoes in Australia decreased by about 40,000 tons during the past decade, the decline being confined to New South Wales. The average yield during the last ten years amounted to 355,996 tons, which is considerably below the maximum production of 507,153 tons obtained in 1906-7.

(ii) *Average Yield.* The suitability of the soil, climate, and general conditions for potato growing is evidenced by the satisfactory yields per acre which are generally obtained in Australia, despite the little attention paid to this crop, the average yield during the past ten seasons being 2.60 tons per acre. The lowest average yield is that obtained in Queensland with an average of 1.86 tons for the same period.

Particulars for each State for the seasons 1917-18 to 1921-22, and also for the past decennium, are given hereunder :—

POTATOES.—YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18	2.21	2.72	2.06	2.72	2.52	2.58	2.27	2.55
1918-19	1.45	2.66	1.72	4.04	2.97	2.26	1.50	2.34
1919-20	2.49	2.71	1.77	3.23	3.69	2.32	3.43	2.58
1920-21	2.29	2.74	2.17	3.55	3.14	2.77	3.67	2.66
1921-22	1.96	2.72	1.76	3.21	3.77	2.92	3.33	2.60
Average for 10 seasons 1912-22	2.18	2.80	1.86	3.28	3.07	2.56	2.11	2.60

(iii) *Relation to Population.* The average production of potatoes per annum per head of the population of Australia for the past five seasons was approximately 141 lbs. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, while for the past five seasons it has averaged about 7½ cwt. Details for the seasons 1917-18 to 1921-22 are as follows :—

POTATOES.—PRODUCTION PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18	26	129	32	25	37	356	24	70
1918-19	15	96	16	29	38	279	1	51
1919-20	25	97	11	23	40	315	12	55
1920-21	30	112	25	35	40	417	11	69
1921-22	27	112	22	37	41	493	5	70

2. *Imports and Exports.*—Under normal conditions there is a moderate export trade in potatoes carried on by Australia principally with New Zealand, the Pacific Islands and the Philippine Islands. On the other hand, when the recurrence of droughts causes

a shortage in some of the States, importations are usually made from New Zealand. The quantities and values of the Australian oversea imports and exports of potatoes during the past five years are shown in the following table:—

POTATOES.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1917-18	38	367	3,348	23,203	3,310	22,836
1918-19	308	3,570	6,742	50,308	6,434	46,738
1919-20	2,614	41,391	1,455	22,954	1,159	18,437
1920-21	56	746	1,130	13,222	1,074	12,476
1921-22	59	499	2,540	21,611	2,481	21,112

NOTE.—The minus sign — signifies net imports.

3. Value of Potato Crop.—The estimated value of the potato crop of each State for the season 1921-22 is given in the following table, together with the value per acre:—

POTATOES.—VALUE OF CROP, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
Total value ..	£327,690	£772,787	£119,237	£119,642	£119,611	£645,744	£60	£2,104,771
Value per acre	£11/2/3	£12/1/11	£12/9/8	£20/12/11	£33/2/4	£17/11/0	£20/0/0	£14/2/3

§ 10. Other Root and Tuber Crops.

1. Nature and Extent.—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1921-22 being only 18,082 acres. The principal of these crops are onions, mangolds, sugar beet, turnips, and “sweet potatoes.” Of these, onions and sugar beet are most largely grown in Victoria, turnips and mangolds in Tasmania, and sweet potatoes in Queensland. The total area under onions in Australia during the season 1921-22 was 7,063 acres, giving a yield of 36,235 tons, and averaging 5.13 tons per acre. The area devoted in 1921-22 to root crops other than potatoes and onions, viz., 11,019 acres, yielded 81,190 tons, and gave an average of 7.37 tons per acre. The areas and yields here given are exclusive of the production of “market gardens,” reference to which is made further on.

2. Imports and Exports.—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by Australia is that of onions. During the past five years 3,549 tons, valued at £54,046, were imported, principally from New Zealand, Japan, and the United States, while during the same period, the exports totalled 20,304 tons, valued at £233,683, and were shipped mainly to New Zealand, the Pacific Islands, the Philippines, and the United States of America.

§ 11. Hay.

1. Nature and Extent.—(i) *Area and Yield.* As already stated, the most important crop of Australia is that of wheat grown for grain. Next to this in importance is the hay crop, which for the five seasons ended 1921-22 averaged nearly 20 per cent. of the area under crop in Australia, and for 1921-22, 19.50 per cent. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States during the last five years is given hereunder. The progress from 1860 onwards may be traced from the graph accompanying this chapter.

HAY.—AREA AND YIELD, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	Fed. Cap. Ter.	Aus-tralia.
AREA.									
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18.	619,614	748,808	96,431	407,011	265,899	74,107	14	1,030	2,212,914
1918-19	813,379	984,479	54,772	501,731	249,796	87,136	30	1,581	2,692,904
1919-20	936,800	1,116,998	48,843	590,835	327,498	102,908	100	1,671	3,125,653
1920-21	853,109	1,333,397	94,212	570,865	266,824	113,618	10	1,154	3,233,189
1921-22	749,738	1,159,135	98,155	559,285	335,561	91,443	12	1,190	2,994,519
YIELD.									
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18	781,972	949,545	153,895	488,693	267,163	80,405	14	2,234	2,723,921
1918-19	751,247	1,113,861	92,230	567,941	250,014	115,896	30	2,383	2,893,602
1919-20	578,605	1,242,489	41,804	598,954	379,025	143,053	500	2,354	2,986,784
1920-21	1,372,836	1,984,854	116,709	769,050	264,244	176,798	20	1,855	4,686,366
1921-22	1,027,833	1,548,453	138,675	680,201	368,720	136,991	25	1,291	3,902,189

In all the States marked fluctuations occur yearly in the area under hay. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus, crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the grain-yield is not satisfactory. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in Australia during the season 1915-16, *i.e.*, 3,597,771 acres, was the highest on record, whilst the average yield during the past decennium amounted to 2,912,914 tons.

(ii) *Average Yield.* The States in which the highest average yields per acre have been obtained during the last decennium are those of Tasmania and Queensland, these being also the States in which the smallest areas are devoted to this crop. For the same period the lowest yield for Australia as a whole was that of 13 cwt. per acre in 1914-15; while the highest was that of 31½ cwt. in 1915-16, followed closely by 29 cwt. obtained

in 1920-21. The average for the decennium was $24\frac{1}{2}$ cwt. Particulars for the several States for the seasons 1917-18 to 1921-22, and the average for the last ten years, are given hereunder:—

HAY.—YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18	1.26	1.27	1.60	1.20	1.00	1.08	1.00	2.17	1.23
1918-19	0.92	1.13	1.68	1.13	1.00	1.33	1.00	1.51	1.07
1919-20	0.62	1.11	0.86	1.01	1.16	1.39	5.00	1.41	0.96
1920-21	1.61	1.49	1.24	1.35	0.99	1.56	2.00	1.61	1.45
1921-22	1.37	1.34	1.41	1.22	1.10	1.50	2.08	1.08	1.30
Average for 10 seasons									
1912-22	1.17	1.31	1.33	1.15	1.02	1.41	2.51	1.40	1.22

(iii) *Relation to Population.* During the past five seasons the Australian hay production per head of population has varied between 11 cwt. in 1917-18 and $17\frac{1}{4}$ cwt. in 1920-21; averaging about 13 cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the seasons 1917-18 to 1921-22 are given hereunder:—

HAY.—YIELD PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18 ..	407	670	224	1,094	872	406	3	1,062	547
1918-19 ..	383	775	131	1,241	807	571	6	1,068	569
1919-20 ..	284	827	57	1,244	1,158	681	110	1,227	563
1920-21 ..	657	873	155	1,566	799	831	5	941	866
1921-22 ..	483	998	180	1,353	1,100	627	7	625	708

(iv) *Varieties Grown.* Particulars concerning the kinds of crop cut for hay are furnished in the returns prepared by five of the States. In the case of Tasmania the bulk consists of oaten hay; full particulars, however, are not available for that State.

Details for the past five seasons are given in the following table:—

HAY.—VARIETIES GROWN, 1917-18 TO 1921-22.

Varieties.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—					
Wheaten	434,908	612,771	716,770	520,417	467,068
Oaten	118,209	152,057	172,310	259,022	203,074
Barley	843	1,238	1,750	1,832	899
Lucerne	64,668	46,336	46,555	70,995	77,527
Other	986	977	1,086	843	1,170
Total	619,614	813,379	938,471	853,109	749,738

HAY.—VARIETIES GROWN, 1917-18 TO 1921-22—*continued*.

Varieties.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	Acres.	Acres.	Acres.	Acres.	Acres.
VICTORIA—					
Wheaten	192,478	274,320	417,221	165,502	130,181
Oaten	532,634	691,808	681,179	1,140,578	1,001,256
Lucerne, etc.	23,696	18,351	18,598	27,317	27,698
Total ..	748,808	984,479	1,116,998	1,333,397	1,159,135
QUEENSLAND—					
Wheaten	7,247	1, 02	11,710	14,024	13,837
Oaten	10,901	1,803	2,488	19,229	12,480
Lucerne	73,347	48,264	29,348	53,059	67,183
Other	4,936	2,803	5,297	7,900	4,655
Total ..	96,431	54,772	48,843	94,212	98,155
SOUTH AUSTRALIA—					
Wheaten	292,803	358,068	450,371	329,543	325,769
Oaten	107,284	138,507	134,775	231,446	225,878
Lucerne	2,123	2,106	2,167	3 938	4,145
Other	4,801	3,050	3,522	5,938	3,493
Total ..	407,011	501,731	590,835	570,865	559,285
WESTERN AUSTRALIA—					
Wheaten	208,303	190,399	234,772	169,264	222,209
Oaten	56,002	58,551	91,152	96,228	111,386
Lucerne	352	137	206	146	125
Other	1,242	709	1,368	1,186	1,841
Total ..	265,899	249,796	327,498	266,824	335,561

Wheaten hay is the principal hay crop in New South Wales, South Australia, and Western Australia, oaten hay in Victoria and Tasmania, and lucerne in Queensland.

2. Comparison with Other Countries.—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy prominent places. The statistics of hay production in these countries are not prepared on a uniform basis, consequently any attempt to furnish extensive comparisons would be misleading. It may be noted, however, that in Great Britain the production of hay from clover, sainfoin, etc., for the year 1922 amounted to 2,410,000 tons from 1,959,247 acres, while from permanent grasses a yield of 4,281,000 tons of hay was obtained from 4,557,922 acres, giving a total of 6,691,000 tons from 6,517,169 acres, or about 20½ cwt. per acre.

3. Imports and Exports.—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of Australia. During 1921-22, 66 tons were imported, while the exports amounted to 3,491 tons, valued at £21,354, the principal purchases being made by the Philippine Islands, the Straits Settlements, Netherlands East Indies and India.

4. **Value of Hay Crop.**—The following table shows the value and the value per acre of the hay crop of the several States for the season 1921-22 :—

HAY.—VALUE OF CROP, 1921-22.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	£	£	£	£	£	£	£	£	£
Total Value ..	6,994,820	5,884,121	822,578	2,244,664	1,785,965	431,522	32	8,760	18,172,462
Value per acre	£9/6/7	£5/1/6	£8/7/7	£4/0/9	£5/6/5	£4/14/5	£2/13/4	£7/7/3	£6/1/4

§ 12. Green Forage.

1. **Nature and Extent.**—(i) *Area.* In all the States a considerable area is devoted to the production of green forage, mainly in connexion with the dairying industry. The total area so cropped during the season 1921-22 was 452,508 acres. The Queensland area represented about 33 per cent., that of New South Wales 28½ per cent., while that of Victoria amounted to 19¾ per cent. Under normal conditions the principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States during each of the last five years are given in the following table :—

GREEN FORAGE.—AREA, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18	152,500	55,903	87,909	41,869	29,856	5,676	47	19	373,779
1918-19	331,079	73,641	90,635	56,067	28,141	6,827	..	50	586,440
1919-20	1,007,407	89,802	157,568	114,126	27,007	5,271	..	28	1,401,209
1920-21	112,003	79,524	142,554	40,678	26,620	5,575	..	..	406,954
1921-22	128,965	89,410	147,135	50,121	27,396	9,481	..	..	452,508

(ii) *Relation to Population.* Particulars of the area under green forage per 1,000 of the population of Australia and of the several States for the seasons 1917-18 to 1921-22 are given hereunder :—

GREEN FORAGE.—AREA PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	79	39	128	94	97	29	10	9	75
1918-19 ..	169	51	128	113	91	34	..	22	115
1919-20 ..	494	60	214	237	82	25	..	15	264
1920-21 ..	54	52	190	83	80	26	..	..	75
1921-22 ..	61	58	191	100	82	43	..	..	82

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Australian total for the season 1921-22 may be taken approximately as £1,885,036, or about £4 3s. 4d. per acre.

§ 13. Sugar-cane and Sugar-beet.

1. **Sugar-cane.**—(i) *Area.* Sugar-cane is grown for sugar-making purposes in only two of the States of Australia, viz., Queensland and New South Wales, and much more extensively in the former than in the latter. Thus, of a total area of 197,293 acres under sugar-cane in Australia for the season 1921-22, there were 184,513 acres, or about 93½ per cent., in Queensland. Sugar-cane growing appears to have been started in Australia in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of 20 acres for the season 1862-3. In the following season the New South Wales records show an area of 2 acres under this crop. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. Thence onwards with slight variations it gradually fell to 12,780 acres in 1921-22. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1921-22 being the highest on record. The area under sugar-cane in Australia from 1917-18 is given in the following table, and particulars for earlier years may be seen from the graphs hereinbefore :—

SUGAR-CANE.—AREA, 1917-18 TO 1921-22.

Season.	New South Wales.		Queensland.		Australia.		
	Productive.	Unproductive.	Productive.	Unproductive.	Productive.	Unproductive.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	5,588	5,008	108,707	67,055	114,295	72,063	186,358
1918-19 ..	4,566	5,924	111,572	48,962	116,138	54,886	171,024
1919-20 ..	4,827	5,741	84,877	63,592	89,704	69,333	159,037
1920-21 ..	5,519	5,863	89,142	73,477	94,661	79,340	174,001
1921-22 ..	5,400	7,380	122,956	61,557	128,356	68,937	197,293

(ii) *Productive and Unproductive Cane.* The areas given in the preceding table represent sugar-cane grown during the seasons specified for purposes other than green forage. The whole area was not in any case cut for crushing during that season, there being always a considerable amount of young and "stand over" cane, as well as a small quantity required for plants. The season in which the highest acreage under sugar cane is recorded may not necessarily show the greatest area of productive cane cut for crushing, but both records were obtained in the latest season under review, i.e., 1921-22.

(iii) *Yield of Cane and Sugar.* Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for Australia was 1,073,883 tons, as against the maximum production of 2,879,092 tons in 1917-18. The second highest yield was in the season 1921-22, with a total of 2,436,890 tons. The average production of cane during the decennium ended 1921-22 was 1,846,117 tons. The three highest yields of sugar were in 1917-18, 1921-22, and 1913-14, the quantities

being 327,589 tons, 300,004 tons, and 265,029 tons respectively. The decennial average was 217,827 tons of sugar. Particulars relative to the total yields of cane and sugar for the past five years are as follows:—

SUGAR-CANE.—YIELD OF CANE AND SUGAR, 1917-18 TO 1921-22.

Season.	New South Wales.		Queensland.		Australia.	
	Cane.	Sugar.	Cane.	Sugar.	Cane.	Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18 ..	174,881	19,875	2,704,211	307,714	2,879,092	327,589
1918-19 ..	105,234	12,278	1,674,829	189,978	1,780,063	202,256
1919-20 ..	91,321	10,837	1,258,760	162,136	1,350,081	172,973
1920-21 ..	131,313	15,124	1,339,455	167,401	1,470,768	182,525
1921-22 ..	149,474	17,806	2,287,416	282,198	2,436,890	300,004

The cane cut in 1922 was approximately 2,311,000 tons. This yield is under that for 1921, but the higher sugar content produced about 306,000 tons of sugar, a larger return than that obtained in the previous year. In accordance with the agreement made by the Commonwealth Government respecting the yields for the three years 1920, 1921, and 1922, the sugar industry rapidly progressed. The effect of the guaranteed price was to induce mill-owners to make considerable additions to their plants and so increase the efficiency of their mills, while farmers in nearly every district put new areas under cane, using in many cases land that had lain unproductive for years.

A preliminary estimate of the production of sugar in 1923 places the amount at 256,000 tons.

Large quantities of molasses are produced as a by-product in the sugar mills; details for a series of years of the quantity produced and proportions used for distilling, fuel, manure and other purposes will be found in Chapter XXII.—“Manufacturing.”

(iv) *Average Yield of Cane and Sugar.* The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 26.34 tons for the former and 17.41 for the latter State. For some years prior to 1910-11, the yield remained practically constant in New South Wales at about 21 tons per acre. Since that year, the average yield per acre has shown an upward tendency, reaching 30 tons or over during 1913-14, 1914-15, and 1917-18. The climatic conditions affecting the tremendous length of coastline embracing this industry in Queensland are largely responsible for the great variations in the yields of sugar for that State, the figures ranging during the past decennium from 12.20 tons per acre in 1915-16 to 24.88 tons in 1917-18.

The greatest production of sugar per acre crushed in Australia during the past quinquennium occurred in 1917-18, when 2.87 tons were obtained, the respective crushings for New South Wales and Queensland averaging 3.56 and 2.83 tons. The average yield per acre for the past ten years was 3.07 tons in New South Wales, and 2.06 tons in Queensland.

(v) *Quality of Cane.* The quantity of cane required to produce a ton of sugar varies not only with the district in which the cane is grown, but also with the season, and for the decennium ended 1921-22 averaged 8.47 tons, the average production of sugar being approximately 11.8 per cent. of the weight of cane crushed. The systematic study of

beet culture in European countries has shown that by suitable methods the sugar contents of the root can be greatly increased, and it is believed that a similar improvement can be effected in the yield from sugar-cane.

SUGAR-CANE AND SUGAR.—YIELD PER ACRE, 1917-18 TO 1921-22.

Season.	New South Wales.			Queensland.			Australia.		
	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.	Cane per acre Crushed.	Sugar per acre Crushed.	Cane to each ton of Sugar.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18	31.30	3.56	8.80	24.88	2.83	8.79	25.19	2.87	8.79
1918-19	23.05	2.69	8.57	15.01	1.70	8.82	15.33	1.74	8.80
1919-20	18.92	2.25	8.43	14.83	1.91	7.76	15.05	1.93	7.81
1920-21	23.79	2.74	8.68	15.03	1.88	8.00	15.54	1.93	8.06
1921-22	27.68	3.30	8.40	18.60	2.30	8.11	18.99	2.34	8.12
Average 10 seasons 1912-22 ..	26.34	3.07	8.59	17.41	2.06	8.46	17.89	2.11	8.47

(vi) *Relation to Population.* The production of sugar in Australia during the five years 1917-18 to 1921-22 was not sufficient to supply local requirements, the average production during the period amounting to 101½ lbs. per head of population, while the consumption was estimated to average 117 lbs. per head. In 1917-18 and 1921-22, and, according to the preliminary figures in 1922-23 also, the production of sugar exceeded the consumption. Details for the period 1917-18 to 1921-22 are as follows:—

SUGAR.—PRODUCTION PER HEAD OF POPULATION, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	23	14	12	16	19
Queensland	1,002	603	492	498	821
Australia	147	89	73	76	122

2. *Sugar-beet.*—(i) *Area and Yield.* The following table shows the acreage under sugar-beet, and the production in Victoria during the past five seasons:—

SUGAR-BEET.—AREA AND PRODUCTION IN VICTORIA, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Area harvested .. acres	1,200	1,009	1,090	1,180	1,600
Production .. tons	14,487	12,290	13,195	7,147	16,577
Average per acre ..	12.07	12.18	12.11	6.06	10.36
Sugar produced ..	1,650	1,263	1,551	833	1,872

The production of sugar-beet in 1922-23 was approximately 20,444 tons, which yielded 2,770 tons of sugar.

(ii) *Encouragement of Beet-growing.* During recent years an effort has been made to revive the sugar-beet industry in Victoria. The State Government is proceeding with a comprehensive irrigation scheme at Maffra, where the sugar-beet factory is situated.

When completed, this scheme will make available for beet-growing large areas of land hitherto unsuitable. In view of the prospective expansion of the area under beet the Government is contemplating the expenditure of £100,000 in modernizing and enlarging the factory plant. A fine grade of white sugar is manufactured, and considerable quantities of beet pulp and molasses are distributed for stock feed.

3. Sugar Bounties.—The provision of bounties or similar aids to the sugar-growers of Australia early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, and at the same time diminishing the employment of coloured labour in connexion therewith. An account of the various Acts in connexion with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of Year Book No. 6. In 1912 the Sugar Excise Repeal Act and the Sugar Bounty Abolition Act were passed by the Federal Parliament, conditionally on the Queensland Parliament approving of legislation prohibiting the employment of coloured labour in connexion with the industry. The State Sugar Cultivation Act, the Sugar Growers Act, and the Sugar Growers' Employees Act of 1913, having been approved of, the 1912 Federal Acts, which repeal all previous enactments in regard to excise on sugar and bounty on cane, came into force by proclamation in July, 1913.

4. Sugar Purchase by Commonwealth Government.—Particulars of the purchase by the Commonwealth Government of the Australian sugar output from 1915 onwards, together with the agreement made between the Commonwealth and Queensland Governments covering the three seasons ended 1922, will be found on page 277 in the previous issue of the Year Book.

On the termination of the 1922 sugar season in June, 1923, the Commonwealth Government announced that the agreement fixing the price of raw sugar at £30 6s. 8d. per ton would not be renewed. The embargo against the importation of black-grown sugar would be continued for a further period of two years from date, on condition that a pool, free from Commonwealth Government control, would be formed to buy raw sugar for the ensuing season at not more than £27 per ton, and to arrange with the Colonial Sugar Refining Company and the Millaquin Company for refining and distribution. Allowing three months for the disposal of the 57,500 tons of carry-over sugar, the retail price was to be reduced in October, 1923, to 4½d. per lb., while special concessions were to be made to manufacturers using sugar in goods for export.

The price of raw sugar in the 1924-25 season was to be fixed by a competent tribunal after investigation, such price not to exceed £27 per ton. The embargo was to be definitely withdrawn on 30th June, 1925, and after that date the sugar industry was to be protected from unfair competition by means of the Customs Tariff.

5. Imports and Exports of Sugar.—The production of sugar in Australia during the past five years has not been sufficient to supply the growing requirements of Australian consumption. It has been found necessary to import on the average some 58,262 tons, valued at £2,592,540, the principal countries engaged in supplying this commodity being Java and Fiji. Particulars concerning the imports and exports of cane-sugar for the past five years are as follows :—

CANE SUGAR.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1917-18	15,805	278,985	2,070	45,860	13,735	233,125
1918-19	52,569	1,052,124	2,029	52,136	50,540	999,988
1919-20	112,805	4,359,203	2,825	83,729	109,980	4,275,474
1920-21	116,274	6,560,373	4,190	220,965	112,084	6,339,408
1921-22	6,888	174,850	1,918	60,145	4,970	114,705

§ 14. Vineyards.

1. **Progress of Cultivation.**—(i) *Area of Vineyards.* The date of introduction of the vine into Australia has been variously set down by different investigators, the years 1815 and 1828 being principally favoured. It would seem, however, that plants were brought out with the first fleet which initiated the colonization of Australia in 1788, consequently the Australian vine is as old as Australian settlement. As already mentioned, a report by Governor Hunter gives the area under vines in 1797 as 8 acres. From New South Wales the cultivation spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area under its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but the progress of the industry in these States has been negligible. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz. :—(i) for wine-making, (ii) for table use, and (iii) for drying. The total area under vines in the several States during each of the last five years is given in the following table, while particulars from 1860 onwards may be gathered from the graph accompanying this chapter :—

VINEYARDS.—AREA, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18	8,594	25,236	1,274	29,762	2,996	There are no vineyards in Tasmania.	67,862
1918-19	8,740	26,172	1,287	31,023	2,936		70,058
1919-20	8,923	27,441	1,203	32,784	2,975		73,326
1920-21	10,783	29,255	1,256	36,661	3,210		81,165
1921-22	12,583	33,175	1,281	41,424	3,951		92,414

The area under vines in Australia amounted to 65,673 acres in 1904-5. From that year onwards a gradual decline set in, and at the end of 1914-15 the acreage had decreased to 60,985. Since that date, however, as the result of satisfactory annual increases, the 1904-5 figure was soon exceeded, and the total for 1921-22 was the highest recorded.

The wine-growing industry in Australia, especially in Victoria and New South Wales, received a severe check by various outbreaks of phylloxera. With a view to the eradication of this disease extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resistant stocks, was prohibited.

(ii) *Wine Production.* The production of wine has not increased as rapidly as the suitability of soil and climate would appear to warrant. The cause is probably twofold, being due in the first place to the fact that Australians are not a wine-drinking people, and consequently do not provide a local market for the product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when their qualities are duly

recognized the wine production of Australia will increase. Particulars of the quantity of wine produced in the several States during the past five seasons are given in the table hereunder :—

WINE.—PRODUCTION, 1917-18 TO 1921-22.

Season.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	Australia.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No produc- tion of wine in Tasmania.	Gallons.
1917-18 ..	538,210	800,068	39,125	5,331,166	156,532		6,865,101
1918-19 ..	555,770	1,349,309	44,491	6,544,125	199,142		8,692,837
1919-20 ..	717,893	1,634,680	48,495	5,085,939	162,397		7,649,404
1920-21 ..	674,188	2,222,305	71,403	7,893,345	152,979		11,014,220
1921-22 ..	627,105	1,355,066	57,793	6,370,310	152,299		8,562,573

(iii) *Relation to Population.* In relation to population the areas of the vineyards of the several States show an upward tendency during the last four years, the Australian total increasing from 14 to 17 acres per 1,000 of the population during the period. Details for the seasons 1917-18 to 1921-22 are given in the succeeding table :—

VINEYARDS.—AREA PER 1,000 OF POPULATION, 1917-18 TO 1921-22.

Season.	New South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	4	18	2	67	10	..	14
1918-19 ..	4	18	2	68	9	..	14
1919-20 ..	4	18	2	68	9	..	14
1920-21 ..	5	19	2	75	10	..	15
1921-22 ..	6	21	2	82	12	..	17

2. *Imports and Exports of Wine.*—(i) *Imports.* The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Italy, the greater portion of the sparkling wines coming from France. Particulars relative to the importations of wine into Australia during the past five years are given hereunder :—

WINE.—IMPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1917-18 ..	9,274	31,808	41,082	20,569	20,635	41,204
1918-19 ..	7,551	30,464	38,015	16,226	21,121	37,347
1919-20 ..	34,383	57,211	91,594	118,164	50,112	168,276
1920-21 ..	39,665	63,824	103,489	135,169	58,248	193,417
1921-22 ..	7,398	37,814	45,212	20,781	35,830	56,611

(ii) *Exports.* The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, and the Pacific Islands. Details concerning the exports of wine from Australia during the past five years are given in the following table :—

WINE.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1917-18 ..	4,976	367,738	372,714	8,269	93,618	101,887
1918-19 ..	7,970	695,536	703,506	16,883	184,285	201,168
1919-20 ..	6,112	795,049	801,161	12,482	221,741	234,223
1920-21 ..	9,669	1,098,678	1,108,347	19,105	291,856	310,961
1921-22 ..	2,177	602,853	605,030	5,451	155,487	160,938

3. *Other Viticultural Products.*—(i) *Table Grapes.* In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, while, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during the past five seasons are as follows :—

TABLE GRAPES.—PRODUCTION, 1917-18 TO 1921-22.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917-18 ..	1,710	1,127	696	984	1,570	..	6,087
1918-19 ..	2,415	2,052	614	1,745	1,892	..	8,718
1919-20 ..	2,678	3,502	613	1,129	2,161	..	10,083
1920-21 ..	2,660	2,471	649	955	2,088	..	8,823
1921-22 ..	2,914	3,075	602	1,027	1,894	..	9,512

(ii) *Raisins and Currants.* Statistics of the quantities of raisins and currants dried during each of the past five seasons are given in the following table :—

RAISINS AND CURRANTS.—QUANTITIES DRIED, 1917-18 TO 1921-22.

Season.	N.S. Wales.		Victoria.		South Aust.		Western Aust.		Australia.	
	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.	Raisins.	Currants.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
1917-18 ..	3,508	1,904	104,911	53,799	42,192	51,924	703	1,948	151,314	109,575
1918-19 ..	3,496	2,450	135,060	68,234	29,662	59,834	2,163	2,157	170,381	132,675
1919-20 ..	7,084	2,465	211,307	55,661	58,502	80,400	3,559	4,307	280,452	142,833
1920-21 ..	4,448	2,469	116,887	62,919	39,534	65,307	7,308	5,786	168,177	136,481
1921-22 ..	6,696	4,189	190,451	75,042	66,083	76,534	6,790	6,371	270,020	162,136
Average 10 seasons 1912-22	6,631		142,268	59,162	43,763	57,682	2,625	2,613	314,744	

4. Imports and Exports of Raisins and Currants.—The following table gives the oversea imports and exports of raisins and currants during each of the past five years :—

**RAISINS AND CURRANTS.—IMPORTS AND EXPORTS, AUSTRALIA,
1917-18 TO 1921-22.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
RAISINS.						
	lbs.	£	lbs.	£	lbs.	£
1917-18..	164,699	4,791	3,957,863	114,510	3,793,164	109,719
1918-19..	28,818	927	3,111,055	95,523	3,082,237	94,596
1919-20..	42,169	2,201	8,839,839	359,561	8,797,670	357,360
1920-21..	14,997	1,366	11,816,126	520,293	11,801,129	518,927
1921-22..	219,499	12,021	13,206,052	550,838	12,986,553	538,817
CURRANTS.						
1917-18..	201	5	4,934,822	134,654	4,934,621	134,649
1918-19..	19,909	505	3,470,803	100,326	3,450,894	99,821
1919-20..	2,877	120	7,947,811	246,382	7,944,934	246,262
1920-21..	3,573	300	5,994,580	208,743	5,991,007	208,443
1921-22..	3,577	102	10,941,175	344,238	10,937,598	344,136

The quantities of raisins and currants imported into Australia were generally greater than the exports for all years prior to 1912, when the increased production in Australia left a surplus available for export. During the last five years the value of the exports exceeded that of the imports by £2,652,630, the average annual excess for the quinquennium being £530,526.

§ 15. Orchards and Fruit Gardens.

1. Progress of Cultivation.—(i) *Area.* Fruit-growing has made rapid progress in Australia during recent years, the area devoted thereto having increased in the past ten years by no less than 85,455 acres. The States in which the increase is most marked are :—Victoria, 29,506 acres ; New South Wales, 27,361 acres ; Queensland, 11,218 acres ; and South Australia, 9,081 acres. During the same period the Tasmanian fruit-growing area increased by 7,526 acres, while that in Western Australia exhibited an increase of 819 acres. The total area under orchards and fruit gardens in the several States is given in the following table :—

ORCHARDS AND FRUIT GARDENS.—AREA, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	64,116	83,818	26,001	29,020	21,137	38,024	18	262,134
1918-19 ..	67,432	85,130	24,250	30,085	20,412	37,424	18	264,751
1919-20 ..	72,802	86,336	24,636	30,617	19,815	37,687	1	271,894
1920-21 ..	75,904	87,768	26,927	31,364	19,570	37,013	5	278,551
1921-22 ..	75,746	89,491	28,035	32,295	19,012	36,565	5	281,149

(ii) *Varieties and Yield.* The varieties grown differ in various parts of the States, ranging from such fruits as the pineapple, paw-paw, mango, and guava of the tropics, to the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, pear, peach, apricot, and plum. In New South Wales, citrus fruits (orange, lemon, etc.), occupy the leading position, although peaches, bananas, apples, pears, and plums are also extensively grown. In Queensland, the banana, the pineapple, the orange, the apple, the peach, and the coconut are the varieties most largely grown. In South Australia, in addition to the apple, orange, apricot, peach, pear, and plum, the almond and the olive are also largely grown. In Western Australia, the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown. In Tasmania, the apple occupies over four-fifths of the fruit-growing area, but small fruits, such as the currant, raspberry, and gooseberry are extensively grown, while the balance of the area is taken up with the pear, apricot, plum, and cherry. The following table gives the acreage under the principal kinds of fruit, and the quantity and value of fruit produced. The acreages are exclusive of young trees not yet bearing. Although annual statistics of area are not collected in Victoria, an effort is made to estimate the acreage under each class of fruit in that State from data based on the triennial collection of the number of trees, subject to annual variations in the total area under orchards and fruit gardens:—

ORCHARDS AND FRUIT GARDENS.—VARIETIES AND YIELD, 1921-22.

Fruit.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
Apples	.. acres	9,377	25,763	2,203	9,025	7,819	26,760	4	80,951
	bushels	528,202	1,768,800	117,223	602,674	538,175	2,990,550	510	6,546,134
	£	162,590	508,530	64,473	190,079	304,405	768,000	160	1,998,237
Apricots	.. acres	1,285	4,392	110	2,535	514	1,450	..	10,286
	bushels	112,866	208,215	4,073	170,455	29,801	129,619	..	655,029
	£	43,790	83,286	2,919	91,187	23,096	24,843	..	269,121
Bananas	.. acres	4,570	..	9,873	..	7	..	..	14,450
	bushels	650,300	..	1,307,090	..	785	..	..	1,958,175
	£	368,500	..	363,080	..	1,178	..	..	732,758
Lemons	.. acres	2,506	1,255	367	407	330	..	..	4,865
	bushels	303,356	103,127	21,514	51,847	36,320	..	..	516,164
	£	63,820	42,540	8,964	15,554	14,150	..	..	145,028
Nectarines and	{ acres	8,651	10,550	2,204	2,619	1,004	72	..	25,100
	{ bshls.	742,676	925,524	112,125	185,582	46,896	6,123	23	2,018,949
Peaches	£	289,068	304,067	50,534	74,183	43,812	1,148	12	762,824
Oranges	.. acres	19,466	3,965	2,828	3,197	2,349	..	..	31,805
	bushels	1,821,629	237,949	255,818	355,111	193,107	..	..	2,863,614
	£	671,570	118,975	118,316	133,167	122,548	..	..	1,164,576
Pineapples	acres	26	..	3,956	..	..	..	..	3,982
	dozen	4,818	..	876,101	..	..	..	..	880,919
	£	2,290	..	162,521	..	..	..	..	164,811
Pears	.. acres	2,959	8,559	292	1,766	992	2,000	..	16,568
	bushels	204,933	681,024	9,463	158,536	57,626	207,175	2	1,318,759
	£	77,029	161,743	6,151	40,848	24,971	76,000	1	386,743
Plums	.. acres	2,811	4,235	907	1,716	686	500	1	10,856
	bushels	218,170	207,432	29,696	110,554	41,937	58,921	20	666,730
	£	60,435	39,758	18,065	29,490	27,434	10,311	5	185,498
Other fruits	acres	2,877	7,315	2,517	3,520	740	2,160	..	19,129
	£	127,398	161,575	88,667	84,349	29,726	156,766	12	648,493
Total	.. acres	54,528	66,034	25,257	24,785	14,441	32,942	5	217,992
	£	1,866,490	1,420,474	883,690	658,857	591,320	1,037,068	190	6,458,089

(iii) *Relation to Population.* The acreage of the orchards and fruit gardens of Australia in relation to population has shown a tendency to decrease slightly during the past five years. The Australian figure for 1921-22 amounted to .05 acres per head,

whilst the range amongst the States extended from .036 in New South Wales to .167 acres in Tasmania. Details for orchards and fruit gardens for the years 1917-18 to 1921-22 are as follows :—

**ORCHARDS AND FRUIT GARDENS.—AREA PER 1,000 OF POPULATION,
1917-18 TO 1921-22.**

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Aus- tralia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	33	59	38	65	69	192	..	9	53
1918-19 ..	34	59	34	66	66	184	..	8	52
1919-20 ..	36	57	33	64	61	180	..	0.5	51
1920-21 ..	36	57	36	64	59	174	..	3	51
1921-22 ..	36	58	36	64	57	167	..	2	51

2. Imports and Exports of Fruit.—(i) *General.* A considerable fruit trade, both import and export, is carried on by Australia with overseas countries, the major portion of the importations consisting of bananas and dates, while apples and dried fruits, principally raisins and currants, bulk largely in the exports. The annual importation of bananas into Australia from Fiji was fairly considerable until the year 1921-22, when the imposition of a Customs duty of 1d. per lb. reduced the value from an average of £100,000 to £20,797. Dates are imported from Mesopotamia and Asia Minor. The exports of apples were mainly consigned to the United Kingdom. Many varieties of dried fruits have been imported into Australia since 1917-18, but the bulk of those exported consisted of currants and raisins, which were shipped mainly to the United Kingdom, New Zealand, Canada, and the United States of America.

(ii) *Fresh Fruits.* Information with regard to the Australian overseas trade in fresh fruits is given hereunder :—

FRESH FRUITS.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1917-18..	25,635,100	160,899	4,648,900	46,481	-20,986,200	-114,418
1918-19..	13,656,500	90,034	20,809,100	188,381	7,152,600	98,347
1919-20..	8,330,500	95,560	42,722,200	466,910	34,391,700	371,350
1920-21..	11,555,200	130,471	51,686,200	535,525	40,131,000	405,054
1921-22..	2,385,800	29,907	97,343,800	973,726	94,958,000	943,819

NOTE.—The minus sign - signifies net imports.

The export trade in fresh fruits consists mainly of apples, the value of the shipments, which have increased rapidly during the past five years, amounting in 1921-22 to £803,286.

(iii) *Dried Fruits.* Particulars of oversea imports and exports of dried fruits for the last five years are as follows :—

DRIED FRUITS (a).—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1917-18..	1,587,451	42,856	9,427,669	266,297	7,840,218	223,441
1918-19..	1,806,333	53,594	8,524,587	253,040	6,718,254	199,446
1919-20..	9,444,713	234,811	18,034,391	643,670	8,589,678	408,859
1920-21..	7,362,341	168,076	19,598,672	806,134	12,236,331	638,058
1921-22..	6,036,379	132,392	25,955,733	969,457	19,919,354	837,065

(a) Including raisins and currants referred to under Vineyards, § 14, 4.

(iv) *Jams and Jellies.* The oversea trade in jams and jellies expanded considerably during the war years, and in 1918-19 the record shipment of 79,277,560 lbs., valued at £1,847,970, was despatched from Australia. Since that year, however, there has been a heavy decline, and the value of the exports contracted to £164,046 in 1921-22. Particulars relative to imports and exports during each of the last five years are as follows :—

JAMS AND JELLIES.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1917-18..	16,658	521	64,891,116	1,410,548	64,874,458	1,410,027
1918-19..	78,329	2,294	79,277,560	1,847,970	79,199,231	1,845,676
1919-20..	179,480	9,913	44,793,409	1,218,997	44,613,929	1,209,084
1920-21..	379,401	14,543	16,535,335	550,403	16,155,934	535,860
1921-22..	184,993	8,437	5,640,579	164,046	5,455,586	155,609

(v) *Preserved Fruit.* Details concerning the quantities and values of preserved fruit imported into and exported from Australia cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, preserved or partly preserved in liquid, or pulped, imported into Australia during 1921-22 was £47,998, and the corresponding value of exports was £1,024,957.

§ 16. Minor Crops.

1. **General.**—In addition to the leading crops previously dealt with in some detail, there are many others which, owing either to their nature, or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are included under the headings—Market Gardens, Pumpkins and Melons, Nurseries, Grass Seed, Tobacco, Flax, Hops, and Millet. Cotton-growing has recently received considerable attention in the tropical portions of Australia, and the prospects of establishing this industry on a large scale are very favourable. The total area in Australia during the season 1921-22, devoted to crops not dealt with in previous sections, was 73,862 acres, of which market gardens accounted for 28,954 acres, or more than 39 per cent.

2. **Market Gardens.**—Under this head are included all areas on which mixed vegetables are grown. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., the

figures are usually not included with market gardens; but are shown either under some specific head, or under some general head as "Other Root Crops," or "All Other Crops." The area under market gardens in the several States of Australia during each of the last five seasons is given hereunder:—

MARKET GARDENS.—AREA, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap. Ter.	Australia.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1917-18 ..	10,100	11,362	1,991	1,502	2,334	447	..	39	27,775
1918-19 ..	10,004	11,594	1,814	1,405	2,237	389	..	39	27,482
1919-20 ..	9,833	12,633	1,752	1,343	2,410	367	..	39	28,377
1920-21 ..	9,888	12,201	2,018	1,471	2,269	386	..	27	28,260
1921-22 ..	8,217	14,304	1,965	1,486	2,274	681	..	27	28,954

3. Grass Seed.—The total area under this crop during 1921-22, exclusive of New South Wales, for which State no figures as to area are available, was 3,594 acres, of which 1,953 acres were in Victoria, 639 acres in Queensland, and 964 acres in Tasmania. The total yield for 1921-22, including New South Wales, was 39,152 bushels, valued at £27,682.

4. Tobacco.—Tobacco-growing has experienced marked fluctuations, although at one time it promised to occupy an important place amongst the agricultural industries of Australia. Thus, as early as the season 1888-89 the area under this crop amounted to as much as 6,641 acres, of which 4,833 were in New South Wales, 1,685 in Victoria, and 123 in Queensland. This promise of importance was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2,000 acres, and that in Queensland to over 1,000 acres, the total area for the season 1921-22 had declined to 1,967 acres, distributed as follows:—New South Wales, 1,164 acres; Victoria, 604 acres; Queensland, 198 acres; and South Australia, 1 acre. In all the States in which its cultivation has been tried, the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into Australia furnish an indication of the extensive local market which exists for an article grown and prepared to meet the requirements of consumers. The value of the net importations of tobacco into Australia during the year 1921-22 amounted to £1,953,728, comprising unmanufactured tobacco £2,178,765, cigars £53,901, cigarettes £47,997, and snuff £448, while manufactured tobacco showed a balance in favour of exports amounting to £327,383.

5. Pumpkins and Melons.—The total area under this crop in Australia during 1921-22 was 15,656 acres, of which 2,926 acres were in New South Wales, 1,514 acres in Victoria, 10,199 acres in Queensland, 643 acres in Western Australia, 276 acres in South Australia, and 98 acres in the Northern Territory. The production in all the States amounted to 58,273 tons.

6. Hops.—Hop-growing in Australia is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1921-22 being 1,562 acres, of which 1,455 acres were in Tasmania, 104 acres in Victoria, and 3 acres in South Australia. The Tasmanian area, though still small, has increased considerably during the past twenty years, the total for the season 1901-2 being only 599 acres. On the other hand the Victorian area, which in 1901-2 was 307 acres, had diminished to 104 acres in 1921-22. The cultivation of hops was much more extensive in Victoria some 40 years ago than at present, the area in 1883-84 being no less than 1,758 acres. During the year 1921-22 the imports of hops exceeded the exports by 744,236 lbs., the excess value being £77,824.

7. Flax.—For the past twenty years flax has been grown intermittently in the Gippsland district of Victoria, and attempts have been made to introduce its cultivation into Tasmania and New South Wales, but without success. In order to foster the

industry, the Commonwealth Government in 1907 provided for the payment of a bounty of 10 per cent. of the market value of all flax products, but the low returns for fibre—about £45 per ton—prevented the extension of flax-growing to any appreciable degree, and on 1st July, 1917, the bounty provisions expired. At the end of that year, however, the shortage of flax fibre in the world had become acute and the Commonwealth Government formulated a scheme to encourage the cultivation of flax. A Flax Industry Committee, consisting of representatives of the Department of Agriculture in Victoria, the flax-growers, and the cordage manufacturers, was appointed with executive powers under War Precautions Regulations. At the same time, a guarantee was given by the Commonwealth Government of £5 per ton for flax of specified standard grown in 1918. Further guarantees of £6 for 1919, 1920 and 1921, and £5 for 1922 were later given by the Commonwealth Government. The whole of the commercial flax crop is grown in Victoria, but a grant of £1,000 has been provided by the Commonwealth for experimental work, and in most of the States experiments are being carried out to determine the suitability of the soil and climate for the cultivation of this crop. Particulars of the crop in Victoria for the past five years are as follows:—

FLAX.—AREA AND YIELD, VICTORIA, 1917-18 TO 1921-22.

Year.	Area.	Seed Produced.	Fibre Produced.	Tow Produced.	Value of Crop.	Straw awaiting Treatment.
	Acres.	cwt.	cwt.	cwt.	£	tons.
1917-18 ..	419	1,337	925	463	(a)	..
1918-19 ..	1,420	5,200	1,800	2,000	24,400	..
1919-20 ..	1,611	4,970	1,053	394	16,708	1,653
1920-21 ..	993	3,658	938	99	10,100	662
1921-22 ..	918	4,687	440	20	(a)	960

(a) Not available.

Australia imports flax products to the annual value of £1,800,000, and, as it has been demonstrated that flax can be grown to perfection here, there is a good prospect of successfully establishing a local industry.

8. **Millet.**—Millet figures in the statistical records of four of the States. The total area devoted thereto in 1921-22 was 2,230 acres, of which 1,230 acres were in New South Wales, 801 in Victoria, 195 in Queensland, and 4 in the Northern Territory. The particulars here given relate to millet grown for grain and fibre, the quantity for green forage being dealt with in the section relating thereto.

9. **Nurseries.**—In all the States fairly large areas are occupied as nurseries for raising plants, trees, etc. Statistics of the area under flowers, fruit trees, etc., are available for New South Wales, Victoria, South Australia, and Western Australia. During 1921-22 the areas in those States were 747, 1,064, 182, and 150 acres respectively.

10. **Cotton.**—The cultivation of cotton commenced in Queensland in 1860, and ten years later the area cropped had increased from fourteen to upwards of fourteen thousand acres. The re-appearance of American cotton in the European market on the conclusion of the Civil War gave a severe set-back to the new industry, and the area continuously declined till 1888, when only 37 acres were planted. The industry was resuscitated soon after and manufacturing was undertaken on two separate occasions at Ipswich, but operations were not at any time very extensive, and low prices over a term of years checked development. Added interest was shown in the crop in 1903, and in 1913 the Queensland Government made an advance of 1½d. per lb. on seed cotton, and ginned it on owner's account, the final return being equal to about 1½d. per lb.

Considerable interest has recently been manifested in cotton-growing, mainly as a result of the encouragement of the industry by the fixed advance of 5½d. per lb. for seed cotton of good quality for the three years ended 31st July, 1923. The Australian Cotton-Growing Association by establishing modern ginning-plants at convenient centres has also contributed to the flourishing condition of the industry.

The Department of Agriculture has introduced improved long-staple upland varieties, with a view to the production of cotton which will return a good aggregate yield and command also the highest price, while the Queensland Government, acting on expert advice, is contemplating the prohibition of ratoon cotton, and the destruction of the old shrubs and debris in the fields.

The cotton plant requires sufficient moisture and warmth for germination, and sowings in the latter part of September or in October are mostly favoured by Queensland growers. Cotton planted in such months should, in normal seasons, commence opening up during the latter part of March and continue on until the end of June. Particulars of the cotton crop in Queensland during the last five years are as follows :—

COTTON.—AREA AND YIELD, QUEENSLAND, 1919 TO 1923.

Year.						Area.	Yield of Unginned Cotton.
						Acres.	lbs.
1919	..	..	..	..	..	72	27,470
1920	..	..	..	..	..	166	57,065
1921	..	..	..	..	..	1,944(a)	940,126
1922	..	..	..	..	..	6,641	3,878,673
1923 (b)	..	..	..	..	..	35,000(c)	12,000,000

(a) 858 acres not bearing. (b) Estimated. (c) Area harvested.

The figures given above show rapid expansion during the past three years, and present indications point to the ultimate establishment of cotton-growing on a large scale in Australia.

The guarantee for the 1923–24 season has been fixed at 5d. per lb. for cotton of good quality, irrespective of length. The guaranteed prices for the 1924–25 and 1925–26 seasons have not yet been announced.

11. **Coffee.**—Queensland is the only State in which coffee-growing has been extensively tried, but the results have not been satisfactory. The area under crop reached its highest point in the season 1901–2 with 547 acres. In subsequent seasons the area fluctuated somewhat, but on the whole with a downward tendency, and in 1921–22 only 19 acres were recorded, with a yield of 15,034 lbs.

12. **Other Crops.**—Amongst miscellaneous small crops grown in the several States may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Acts of 1907 and 1912, passed by the Federal Parliament with the object of encouraging the manufacture and production of certain articles in Australia, included among the items on which bonuses were payable the following agricultural products :—Cotton, fibres, rice, coffee, tobacco, and dried fruits, except currants and raisins. The rates and dates of expiry of the bounties were shown in previous issues of the Year Book, the only one in force at present being that relating to dates. Though the bonuses were fairly liberal, they were not availed of to any great extent.

§ 18. Fertilizers.

1. **General.**—In the early days of settlement in Australia, scientific cultivation was practically neglected. Farmers were neither under the necessity nor were they aware of the necessity of supplying the proper constituents to the soil for each class of crop. The widely divergent character of the soils, their degeneration by repeated cropping, the limitations of climatic conditions, and the difficulties of following any desired order of rotation of crops, all rendered it essential to give attention to artificial manuring. The introduction of the modern seed-drill acting also as a fertilizer-distributor has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made productive. There is reason to believe that this feature will be even more strikingly characteristic in the future.

2. **Fertilizers Acts.**—In order to protect the interests of users of artificial manures, legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilizers. A list of these Acts and their main features will be found in Year Book No. 12 (page 378).

3. **Imports.**—The local production of artificial manures has greatly increased during the last few years, but considerable quantities are still imported. Imports of fertilizers have increased over 100 per cent. since 1901. The chief items, as regards both quantity and value, are phosphates, a fertilizer which has proved itself very suitable for the growing of cereals in Australian soils. During 1921–22 the values of rock phosphates imported represented over 79 per cent. of the total importation of fertilizers. Nauru, with 66 per cent., was the largest contributor, Gilbert and Ellice Islands Colony coming next with 18 per cent., while the remainder was supplied by Christmas Island. Practically all of the soda nitrate came from Chile.

The imports of artificial manures during the last five years are given in the following table. Apart from a small parcel in 1921–22 no importations of manufactured superphosphates were made during the last five years, although considerable quantities were annually imported up till 1914–15.

FERTILIZERS.—IMPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Fertilizer.				1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Bonedust	..	..	cwt.	..	2,004	1,508	1,260	910
"	..	..	£	..	785	1,420	652	556
Guano	..	..	cwt.	..	137,008	535,688	1,129,240	704,039
"	..	..	£	..	17,304	61,021	124,193	72,892
Superphosphates	..	..	cwt.	..	..	..	..	1,034
"	..	..	£	..	..	..	..	1,145
Rock Phosphates	..	..	cwt.	3,643,038	2,811,812	2,585,163	4,756,140	3,255,808
"	..	..	£	433,940	334,036	330,544	721,608	553,109
Soda Nitrate	..	..	cwt.	53,800	38,483	130,914	99,660	50,214
"	..	..	£	43,264	30,767	84,398	84,532	38,409
Other	..	..	cwt.	397	520	61,454	169	42,063
"	..	..	£	909	488	75,116	1,792	33,561
Total				3,697,235	2,989,827	3,314,727	5,986,469	4,054,068
				£ 478,113	383,380	552,499	932,777	699,672

4. Exports.—The subjoined table shows the exports of artificial manures for the years 1917-18 to 1921-22. Practically the whole of these fertilizers are manufactured locally, and are shipped mainly to New Zealand, Japan, Java, and the Pacific Islands :—

FERTILIZERS.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Fertilizer.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Bonedust cwt.		17,252	34,722	131,710	59,680	33,311
" £		7,221	18,516	74,036	40,926	18,517
Guano cwt.		840	8,669	601	..	..
" £		234	2,775	181	..	..
Superphosphates .. cwt.		699,784	345,493	264,174	472,860	26,727
" £		179,691	95,623	67,288	153,060	6,284
Rock phosphates .. cwt.		70,004	44,032	72,462	186,260	12,900
" £		9,810	6,773	11,775	25,763	1,960
Soda nitrate cwt.		18,888	60	28,223	2,720	5,790
" £		16,741	84	28,673	3,640	5,717
Ammonia sulphate .. cwt.		118,147	196,954	167,420	123,720	155,414
" £		211,322	350,098	226,289	160,017	105,472
Other cwt.		30,037	21,486	158,661	41,320	24,525
" £		14,532	11,008	108,926	25,190	11,956
Total cwt.		954,952	651,416	823,251	886,560	258,667
	£	439,551	484,877	517,168	408,596	149,906

5. Statistics of Use of Fertilizers.—Statistics regarding the use of manures are collected in all the States, and the particulars for 1921-22 are as follow :—

FERTILIZERS USED IN EACH STATE, 1921-22.

State.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage of Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
New South Wales ..	4,445,828	2,103,729	47.32	176,327	52,677
Victoria	4,530,312	3,848,184	84.94	161,683	150,012
Queensland	804,507	32,163	4.00	49,737	8,189
South Australia ..	3,378,764	2,969,546	87.89	114,955	109,254
Western Australia ..	1,901,680	1,857,676	97.68	56,240	73,029
Tasmania	293,708	187,306	63.77	23,603	15,569
Northern Territory ..	283	55	19.43	180	3
Fed. Cap. Territory ..	1,942	600	30.90	..	9
Total	15,357,024	10,999,259	71.62	582,725	408,742

Similar particulars in respect to Australia as a whole during the past five years are as shown below :—

FERTILIZERS USED IN AUSTRALIA, 1917-18 TO 1921-22.

Year.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage of Total Area of Crops.	Natural (Stable Yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1917-18	14,298,982	9,589,908	67.07	556,079	317,095
1918-19	13,332,393	9,292,358	69.70	555,222	313,444
1919-20	13,296,407	9,278,296	69.78	562,545	329,489
1920-21	15,069,858	10,290,633	68.29	556,514	375,600
1921-22	15,357,024	10,999,259	71.62	582,725	408,742

The percentage of the area manured on the total area cultivated has advanced from 67.07 to 71.62 during the past four years, while the use of artificial manures has increased by nearly 100,000 tons during the same period.

6. **Local Production of Fertilizers.**—Statistics relative to the local production of fertilizers are incomplete, and detailed returns for fertilizer factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in Australia at latest available date was 104, made up as follows :—New South Wales, 20 ; Victoria, 30 ; Queensland, 24 ; South Australia, 11 ; Western Australia, 11 ; and Tasmania, 8.

§ 19. Ensilage.

1. **Government Assistance in Production.**—The Government of Victoria, recognizing that defective methods of making ensilage were often adopted, has for some years been making special efforts to educate the farming community by lectures, the issue of bulletins, etc. The Government also undertakes the erection of different types of silos on very liberal terms, repayment extending over a series of years. Experts erect the silos and give practical lessons in regard to cutting and packing the silage. The New South Wales Government also gives advice in the "Agricultural Gazette," and issues special bulletins dealing with the subject, while silos have been erected at the various experimental farms.

2. **Quantity Made.**—Particulars concerning the number of silos and the quantity of ensilage made in the several States of Australia in the seasons 1917-18 to 1921-22 are given in the following table :—

ENSILAGE MADE, 1917-18 TO 1921-22.

State or Territory.	1917-18.		1918-19.		1919-20.		1920-21.		1921-22.	
	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.	Holdings.	Ensilage Made.
	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.	(a) No.	Tons.
New South Wales ..	116	14,789	60	6,292	112	13,323	118	15,633	166	24,174
Victoria ..	117	9,852	95	8,249	74	6,072	99	9,702	107	5,873
Queensland ..	60	4,556	45	3,541	72	4,318	164	7,600	96	6,575
South Australia ..	13	921	16	1,083	15	1,435	25	1,616	26	1,849
Western Australia ..	11	325	11	441	5	211	12	390	7	381
Tasmania ..	38	518	7	180	7	275	11	490	10	544
Northern Territory ..	1	50	1	50	..	..	..	..	..	..
Total ..	356	31,011	235	19,836	285	25,639	429	35,431	412	39,396

(a) No. of holdings on which ensilage was made.

Following the drought of 1902-3 greater attention was paid to the making of ensilage, and during the four seasons ended 1909-10 there was an increase both in the number of holdings on which ensilage was made and in the quantity produced. The following five seasons, however, showed a falling-off, but the reduction was due to the fact that stocks had not been drawn upon to any great extent during the previous seasons. The accumulated stocks proved of great value during the 1914 drought, though far below what would have been the case if more attention had been paid to ensilage-making during the previous years when there was a surplus of green forage. A substantial increase took place in 1915-16, both in the holdings on which ensilage was made and in the quantity produced, but during the next four years the production declined, particularly in Victoria. The figures for the past two years, however, show a satisfactory increase in all the States with the exception of Victoria.

§ 20. Agricultural Colleges and Experimental Farms.

1. **General.**—In most of the States agricultural colleges and experimental farms have been established with a view to the promotion of more scientific methods in agriculture, stock-breeding and dairying. In the colleges, and on some of the farms, provision is made for the accommodation of pupils to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilizers are made, manures are tested, and elementary veterinary science, etc., are taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of showing that it is practicable to produce certain crops in a given place, but also to show how it is possible to make farming pay best in the locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder; in cheese and butter-making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpentering, blacksmithing, and other trades.

Travelling expert lecturers visit the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins.

2. **Particulars of Agricultural Colleges and Experimental Farms.**—In previous issues of this volume detailed information was given regarding agricultural colleges, experimental farms, and agricultural education generally. See Year Book No. 11, pp. 393-5.

3. **Particulars respecting Agricultural and Stock Departments.**—A synopsis of the activities and operations of the Agricultural and Stock Departments of the several States as on 30th June, 1920, will be found in Year Book No. 14, pages 1180 to 1191. The main features of organization are set out under their respective headings as regards staff, expenditure, work undertaken in agricultural colleges, technical schools, experimental farms, and orchards and vineyards. The nature of lectures and other forms of agricultural instruction by experts is dealt with, as well as such matters as the distribution of plants, and the special steps taken to disseminate information amongst agriculturists, and to facilitate the marketing of products.

CHAPTER XVIII.

FARMYARD, DAIRY, AND BEE PRODUCTS.

§ 1. Introductory.

1. **General.**—The introduction of cattle into Australia, and the early history of the dairying industry are referred to in some detail in earlier issues of this work (see Official Year Book No. 6, p. 430). It may here be noted that the original stock has been crossed with specially imported stud cattle, while further judicious crossing of strains has resulted in an increased and improved milk supply. In Australia, dairy cattle thrive in the open throughout the year, local climatic conditions demanding no protection other than tree plantations for shelter, and rugging in the coldest weather. Indigenous and imported grasses furnish food during the greater part of the year, and winter fodder, when necessary, is given to the cattle in the fields. With the adoption of scientific methods in the treatment of animals and pasturages and in the processes of manufacture, coupled with effective State supervision, the dairying industry has shown rapid expansion.

2. **Official Supervision of Industry.**—Dairy experts, under the supervision of the various State Agricultural Departments, give instruction in approved methods of production, and inspect animals, buildings, and marketable produce. A high standard of cleanliness, both of *personnel* and *matériel*, prevails. Financial assistance of a temporary nature is also given, advances made being generally repaid with promptitude.

The export trade is regulated by the terms of the Commonwealth Commerce Act 1905 and regulations thereunder. The provisions of this Act are set out in detail in Official Year Book No. 6, pp. 431-2. It will be sufficient to note here that the true trade description, etc., must be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter the goods are certificated by the inspector

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in the cost of manufacture, since improved appliances such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires less than $2\frac{1}{2}$ gallons.

5. **Butter and Cheese Factories.**—The factories in Australia for the manufacture of butter, cheese, and condensed milk numbered 591 in 1921–22. These were distributed in the various States as follows:—New South Wales, 183; Victoria, 188; Queensland, 134; South Australia, 46; Western Australia, 7; and Tasmania, 33.

§ 2. Dairy Cattle and Dairy Products.

1. **Dairy Herds.**—The dairy herds of Australia were severely depleted during the drought of 1914–15, when the number of dairy cattle was reduced to 1,684,393. Following that year rapid increases took place, particularly in the past two years, in the latter of which the number recorded reached its highest point, and represented a gain of more than 200,000 dairy cattle during the past ten years. In New South Wales, Victoria, South Australia, and Tasmania the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In Southern Queensland, however, the industry has developed remarkably during the last decade, and the progress attained in that area has been mainly responsible for the Australian increases since 1911. The figures for the Northern Territory are rough estimates only:—

CATTLE, AND DAIRY CATTLE—NUMBER, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
New South Wales	{ All Cattle ..	3,148,309	3,271,782	3,075,954	3,367,880	3,538,240
	{ Dairy Cows ..	776,662	717,910	697,140	757,534	815,579
Victoria	{ All Cattle ..	1,371,049	1,596,544	1,831,120	1,575,159	1,750,369
	{ Dairy Cows ..	534,388	592,079	623,652	620,005	719,473
Queensland	{ All Cattle ..	5,316,558	5,786,744	5,940,433	6,455,067	7,047,370
	{ Dairy Cows ..	399,508	381,505	373,146	448,634	554,208
South Australia	{ All Cattle ..	313,245	342,768	349,562	376,399	419,197
	{ Dairy Cows ..	96,661	103,230	106,932	117,536	131,054
Western Australia	{ All Cattle ..	957,086	943,847	880,644	849,803	893,108
	{ Dairy Cows ..	37,979	42,133	42,993	47,719	53,828
Tasmania	{ All Cattle ..	197,938	218,234	214,442	208,202	216,704
	{ Dairy Cows ..	58,910	64,511	64,073	63,681	68,595
Northern Territory	{ All Cattle ..	638,431	570,039	610,534	659,840	568,031
	{ Dairy Cows ..	70	70	70	70	70
Federal Capital Territory	{ All Cattle ..	13,403	8,894	8,378	7,387	8,290
	{ Dairy Cows ..	728	598	480	459	414
Australia ..	{ All Cattle ..	11,956,024	12,738,852	12,711,067	13,499,737	14,441,309
	{ Dairy Cows ..	1,904,906	1,902,036	1,908,536	2,055,638	2,343,221

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, reaching as high as 1,000 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, prior to 1916, considerably under 300 gallons per annum. Unfavourable seasons adversely affected the yields in 1918 and 1919, in which years the averages failed to reach 300 gallons, but satisfactory increases were in evidence throughout the States, with the exception of Western Australia, during the past two years, the 343 gallons obtained in Australia in 1921 constituting a record. The best yields over a series of years appear to be in Victoria, South Australia and New South Wales, while Queensland and Tasmania in normal years are above Western Australia. In the following table the annual average yields per cow for the last five years are taken from the number of dairy cows which were in milk during any part of the year. The average given is considerably below that for cows which were yielding during the greater part of the year. The highest averages were, of course, obtained in those States which have most extensively adopted scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

MILK PRODUCTION, 1917 TO 1921.

Heading.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Ter.	Australia. (b)
1917—								
Dairy cows (a) .. No.	759,603	511,237	371,410	91,486	35,883	55,716	724	1,826,059
Production 1,000 gals.	247,398	199,738	105,384	32,309	7,550	14,843	131	607,353
Aver. per cow .. gals.	326	391	284	353	210	266	182	333
1918—								
Dairy Cows (a) .. No.	747,286	563,234	390,507	99,945	40,056	61,710	663	1,903,401
Production 1,000 gals.	206,925	207,102	87,580	32,243	8,544	15,796	170	558,360
Aver. per cow .. gals.	277	368	224	323	213	256	256	293
1919—								
Dairy Cows (a) .. No.	707,525	607,866	377,325	105,106	42,563	64,292	539	1,905,216
Production 1,000 gals.	203,707	196,884	71,856	30,899	9,608	16,503	90	529,547
Aver. per cow .. gals.	288	324	190	294	226	257	167	278
1920—								
Dairy Cows (a) .. No.	727,337	621,829	410,890	112,259	45,356	63,877	469	1,982,017
Production 1,000 gals.	250,098	204,522	104,659	34,657	10,234	19,000	105	623,275
Aver. per cow .. gals.	344	329	255	309	226	297	223	314
1921—								
Dairy Cows (a) .. No.	786,557	669,739	501,421	124,295	50,773	66,138	437	2,199,360
Production 1,000 gals.	285,166	245,181	151,081	41,398	11,329	21,000	105	755,260
Aver. per cow .. gals.	363	366	301	333	223	318	240	343

(a) Mean for the year.

(b) Exclusive of Northern Territory.

3. Butter and Cheese.—While the quantity of dairy production is largely affected by the nature of the seasons, the output of butter shows a steady increase in the past decade. During that period the average annual production increased from 172,000,000 lbs for the quinquennium 1907–1911 to 205,000,000 lbs. for the latest five years under review. The marked development of dairying in Queensland, where the butter production has more than doubled since 1911, was largely responsible for the increased butter output in Australia, although all the States contributed to this progress, with the exception of Victoria, where the butter industry appears to have remained stationary during the last ten years. The production of 267,071,340 lbs. in 1921 was the maximum output of butter in Australia.

The manufacture of cheese has been steadily increasing throughout Australia during recent years, the 1921 production of 32,653,003 lbs. being the highest yet recorded. The output of cheese has more than doubled in Australia since 1911, largely as the result of substantial progress in Queensland, the production of which State now amounts to one-half of the Australian total.

The development in dairy production since 1896, and in the exports of butter from 1901 onwards are shown in the graphs on page 700. Particulars for the past five years are as follows :—

BUTTER AND CHEESE PRODUCTION, 1917 TO 1921.

State.	1917.	1918.	1919	1920.	1921.
BUTTER.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	a80,460,225	a65,991,738	a63,127,160	a84,259,641	a100,652,620
Victoria	a64,405,711	a66,240,403	a61,218,945	a64,938,458	a82,981,570
Queensland	32,930,690	32,371,575	26,213,514	40,751,373	60,923,194
South Australia	a10,482,895	a10,444,789	a9,810,335	a11,897,279	a14,565,599
Western Australia	1,361,484	1,789,390	1,980,273	2,212,311	2,658,153
Tasmania	4,848,227	4,947,560	4,290,724	4,014,402	5,270,243
Federal Capital Territory ..	a7,782	a17,220	a7,840	a8,400	a19,961
Australia	200,497,014	181,802,675	165,648,791	208,081,864	267,071,340
CHEESE.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	a7,799,676	a5,982,120	a6,762,467	a6,407,209	a7,367,057
Victoria	a5,285,003	a6,055,964	a7,735,023	a3,636,571	a5,675,909
Queensland	11,142,114	8,636,700	8,296,318	11,512,262	15,200,527
South Australia	a2,449,716	a2,412,388	a2,540,183	a1,804,696	a3,392,400
Western Australia	109	200	821	354	1,073
Tasmania	754,196	702,868	861,400	799,432	1,016,037
Australia	27,430,805	23,790,240	26,196,272	24,160,524	32,653,003

(a) For year ended 30th June of year following.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk represents milk the bulk of which is reduced by evaporation. Small quantities of such milk were made prior to 1911, in which year the output for Australia was nearly doubled. Increasing quantities were annually manufactured till 1915, when a substantial falling off was in evidence in each of the three contributing States. During the next six years, however, the condensed milk industry developed considerably, particularly in Victoria, where the output for 1921 was nearly three times greater than that for 1915. There is still an import of milk, but the exports in each year far outweigh the quantity imported. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the returns for the last five years were as follows:—

CONDENSED, CONCENTRATED, OR POWDERED MILK MADE, 1917 TO 1921.

Year.	N.S.W.(a)	Victoria.(a)	Queensland.	Australia.
	lbs.	lbs.	lbs.	lbs.
1917	8,973,916	37,805,070	9,409,059	56,188,045
1918	10,680,409	45,251,710	6,845,610	62,777,729
1919	12,969,679	44,219,389	9,170,034	66,359,102
1920	14,938,147	42,643,871	13,362,464	70,944,482
1921	6,860,466	48,354,210	15,168,652	70,383,328

(a) For year ended 30th June of year following.

5. **Oversea Trade in Butter, Cheese, and Milk.**—The following tables give the imports, exports, and net exports of butter, cheese, and milk. In each of the five years the exports of butter, cheese, and condensed milk exceeded the imports.

**BUTTER, CHEESE AND MILK, IMPORTS AND EXPORTS.—AUSTRALIA.
1917-18 TO 1921-22.**

Products.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
IMPORTS.					
Butter lbs.	8,610	16,439	36,774	33,762	732,336
" £	592	1,087	2,282	2,997	58,982
Cheese lbs.	45,976	13,903	28,625	72,110	85,601
" £	2,940	1,098	2,988	8,371	7,518
Milk—concentrated and preserved(a) lbs.	772,987	575,934	1,075,887	603,565	130,592
" £	42,458	30,802	49,029	30,883	14,658
EXPORTS.					
Butter lbs.	72,277,526	41,114,764	39,006,304	92,420,995	127,579,797
" £	4,904,417	3,193,086	3,301,695	11,067,104	7,987,558
Cheese lbs.	8,427,098	2,303,308	7,524,910	9,531,310	12,671,929
" £	350,819	118,855	377,905	514,252	438,372
Milk—concentrated and preserved(a) lbs.	25,690,663	27,962,938	35,568,218	37,381,955	36,705,320
" £	1,029,424	1,092,911	1,606,310	2,189,167	2,132,580
NET EXPORTS.(b)					
Butter lbs.	72,268,916	41,098,325	38,969,530	92,387,233	126,847,461
" £	4,903,825	3,191,999	3,299,413	11,064,107	7,928,576
Cheese lbs.	8,381,122	2,289,405	7,496,285	9,459,200	12,585,428
" £	347,879	117,757	374,917	505,881	430,854
Milk—concentrated and preserved(a) lbs.	24,917,676	27,387,004	34,492,331	36,778,390	36,574,728
" £	986,966	1,062,109	1,557,281	2,158,284	2,117,922

(a) See definition above. (b) Excess of exports over imports.

6. Local Consumption of Butter and Cheese.—The total production of butter and cheese, with the subtraction or addition of the net export or import for the corresponding period gives approximately the quantity available for consumption in Australia. In the period considered hereunder the local supply of cheese was adequate :—

BUTTER AND CHEESE.—LOCAL CONSUMPTION, 1917 TO 1921.

Products.	1917.	1918.	1919.	1920.	1921.
	lbs.	lbs.	lbs.	lbs.	lbs.
Butter .. Total	128,228,098	140,704,350	126,679,261	115,694,631	139,491,543
„ .. Per head of population ..	25.73	27.69	23.88	21.38	25.32
Cheese .. Total	13,049,683	21,500,835	18,699,987	14,701,324	19,981,974
„ .. Per head of population ..	3.82	4.23	3.53	2.72	3.63

The quantity available for consumption in 1921 averaged nearly 25½ lbs. of butter and about 3¾ lbs. of cheese per head of population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom in normal times is given as about 22½ lbs. per head per annum.

§ 3. Pigs and Pig Products.

1. Pigs.—The number of pigs in Australia from 1917 to 1921 is shown below :—

PIGS.—NUMBER, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
New South Wales (b) ..	395,639	294,338	253,338	305,967	383,326
Victoria (a)	323,159	267,819	186,810	175,275	230,770
Queensland	172,699	140,966	99,593	104,370	145,083
South Australia (b) ..	110,353	79,078	60,295	78,395	87,667
Western Australia ..	111,844	85,863	58,155	60,581	63,001
Tasmania (a)	54,653	44,328	35,530	38,116	49,743
Northern Territory ..	500	1,200	1,675	1,416	452
Federal Cap. Territory (b) ..	518	310	572	286	343
Australia	1,169,365	913,902	695,968	764,406	960,385

(a) As on 1st March of year following. (b) As on 30th June of year following.

For many years the number of pigs in Australia has fluctuated considerably. There was a heavy falling off in 1915, followed by substantial increases during 1916 and 1917, the number of pigs in 1917 being the highest recorded in Australia. The total of 1,169,365 pigs in 1917 declined to 695,968 in the next two years, but the numbers were supplemented by large increases during 1920 and 1921, and the total now amounts to nearly 1,000,000. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, page 687.

2. Bacon and Ham.—(i) *Production.* During the past five years the production of bacon and ham has fluctuated between the record quantity of 66,181,218 lbs. manufactured in 1918, and 50,250,487 lbs. in 1920, the average for the period amounting to 59,545,755 lbs., which is far in excess of any previous five-yearly average.

BACON AND HAM.—PRODUCTION, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales(a) ..	18,544,053	16,801,370	16,657,362	16,249,762	20,413,330
Victoria(a) ..	21,324,846	22,212,395	19,385,509	15,139,100	17,396,798
Queensland ..	14,791,540	16,476,480	12,155,489	11,337,050	12,386,417
South Australia(a) ..	6,591,064	6,567,394	5,810,616	4,172,372	5,089,424
Western Australia(b)	2,362,604	2,813,650	2,609,284	2,077,662	1,962,621
Tasmania ..	1,298,819	1,309,633	1,128,096	1,267,061	1,356,329
Federal Cap. Territory(a)	11,091	296	12,236	7,480	9,540
Total ..	64,924,017	66,181,218	57,758,592	50,250,487	58,614,459

(a) For year ended 30th June of year following. (b) A portion only from pigs slaughtered in the State, balance imported and subsequently cured.

(ii) *Local Consumption.* From 1904 onwards the production of bacon and ham has been sufficient to meet the local demand, and provide a small surplus for export.

BACON AND HAM.—LOCAL CONSUMPTION, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total ..	59,860,162	60,586,277	54,732,706	47,151,519	55,926,806
Per head of population ..	12.01	11.92	10.32	8.71	10.15

3. *Oversea Trade in Pig Products.*—The oversea trade in pigs and pig products* is shown in the following table :—

PIG PRODUCTS.—AUSTRALIAN TRADE, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
PIGS.					
Imports .. No.	20	4	16	11	31
„ .. £	438	102	94	65	194
Exports .. No.	36	60	164	166	119
„ .. £	209	479	1,044	1,199	990
Net Exports .. No.	16	56	148	155	88
„ .. £	- 229	377	950	1,134	796

BACON AND HAM.

Imports .. lbs.	5,097	42,624	15,047	14,610	25,292
„ .. £	353	2,169	1,067	1,479	1,610
Exports .. lbs.	5,068,952	5,637,565	3,040,933	3,113,578	2,712,945
„ .. £	321,635	378,723	258,890	323,280	223,067
Net Exports .. lbs.	5,063,855	5,594,941	3,025,886	3,098,968	2,687,653
„ .. £	321,282	376,554	257,823	321,801	221,457

NOTE.—The minus sign — signifies net imports.

PIG PRODUCTS.—AUSTRALIAN TRADE, 1917-18 TO 1921-22—*continued.*

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
LARD.					
Imports lbs.	7,208	29,575	22,001	42,795	115,659
" £	380	1,475	1,092	1,825	3,625
Exports lbs.	1,466,703	6,016,825	7,969,444	3,118,105	2,909,658
" £	56,353	205,694	375,910	153,084	88,753
Net Exports .. lbs.	1,459,495	5,987,250	7,947,443	3,075,310	2,793,999
" £	55,973	204,219	374,818	151,259	85,128

FROZEN PORK.						
Imports lbs.	121	..	..	..	..	..
" £	3	..	..	..	..	..
Exports lbs.	262,503	839,557	371,397	163,303	152,584	..
" £	11,915	40,325	19,149	9,370	7,414	..
Net Exports .. lbs.	262,382	839,557	371,397	163,303	152,584	..
" £	11,912	40,325	19,149	9,370	7,414	..

The production of pig products in Australia is more than sufficient to meet local requirements, and a fairly large and profitable export trade is being built up.

During the last five years the average annual net export amounted to nearly half a million pounds sterling, the bulk of the shipments consisting of bacon, ham and lard.

§ 4. Total Dairy Production.

The total dairy production of Australia in 1921 is shown below :—

TOTAL DAIRY PRODUCTION.—AUSTRALIA, 1921.

Particulars.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust.	Tasmania.	Fed. Cap. Ter. (a)	Total.
MILK.								
Used for—	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
Butter ..	223,140,885	188,293,740	123,327,251	31,462,964	6,228,201	12,666,621	63,275	585,182,937
Cheese ..	7,709,343	5,641,455	13,277,550	3,270,089	1,546	1,021,648	..	30,921,631
Condensing and con- centrat- ing ..	2,372,202	10,737,971	3,985,979	..	..	..	..	17,096,152
Other pur- poses ..	51,943,191	40,508,054	10,490,112	6,664,852	5,099,526	7,311,731	42,104	122,069,570
Total ..	285,165,621	245,181,220	151,080,892	41,397,905	11,329,273	21,000,000	105,379	675,527,029

BUTTER.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories On Dairy and other Farms ..	95,694,451	77,501,149	58,550,238	10,658,132	1,532,007	3,476,277	..	247,412,254
	4,958,169	5,480,421	2,372,956	3,907,467	1,126,146	1,793,966	19,961	19,659,086
Total ..	100,652,620	82,981,570	60,923,194	14,565,599	2,658,153	5,270,243	19,961	267,071,340

(a) For year ended 30th June, 1922.

(b) Including 10,000 gallons, Northern Territory.

TOTAL DAIRY PRODUCTION.—AUSTRALIA, 1921—*continued*.

Particulars.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust.	Tasmania.	Fed. Cap. Ter. (a)	Total.
CHEESE.								
In Factories ..	lbs. 7,044,567	lbs. 5,359,660	lbs. 15,188,627	lbs. 3,392,160	lbs. ..	lbs. 723,599	lbs. ..	lbs. 31,708,613
On Dairy & other Farms ..	322,490	316,249	11,900	240	1,073	292,438	..	944,390
Total ..	7,367,057	5,675,909	15,200,527	3,392,400	1,073	1,016,037	..	32,653,003

CONDENSED, CONCENTRATED, OR POWDERED MILK.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	6,860,466	48,354,210	15,168,652	..	..	..	..	70,383,328

BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ..	18,544,067	15,583,960	11,973,725	4,169,206	1,728,617b	841,244	..	52,840,819
On Dairy & other Farms ..	1,869,263	1,812,838	412,692	920,218	234,004	515,085	9,540	5,773,640
Total ..	20,413,330	17,396,798	12,386,417	5,089,424	1,962,621	1,356,329	9,540	58,614,459

(a) For year ended 30th June, 1922. (b) A portion only from pigs slaughtered in the State, the balance being imported and subsequently cured.

§ 5. Poultry Farming.

1. **General.**—Poultry stocks are largely maintained by farmers, and production therefrom furnishes a considerable addition to the annual agricultural or dairying returns. During recent years, however, poultry-keeping has assumed an independent position among rural industries, while it is also carried on in conjunction with pig farming. Special poultry farms have been instituted for scientific breeding, and poultry experts give lectures and instruction. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have been greatly improved by careful breeding. Co-operative egg-collecting circles have been formed in some districts; eggs are also delivered with the milk and cream to the local butter factories, and thence forwarded to market.

2. **Poultry Products.**—There is some difficulty in obtaining complete figures for the yield of poultry products. The following values relate to poultry and eggs:—

POULTRY AND EGGS.—VALUE OF PRODUCTION, 1917-18 TO 1921-22.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania. (a)	Australia.
	£	£	£	£	£	£	£
1917-18 ..	2,082,000	2,160,650	295,882	669,105	188,982	250,000	5,646,619
1918-19 ..	2,501,000	2,738,620	319,602	690,539	189,471	300,000	6,739,232
1919-20 ..	2,814,000	3,579,230	356,590	924,986	191,288	300,000	8,166,094
1920-21 ..	3,196,000	4,545,620	449,827	1,164,999	189,658	300,000	9,846,104
1921-22 ..	2,650,000	4,406,750	429,983	1,027,634	208,429	300,000	9,022,796

(a) Estimated.

3. **Oversea Trade in Poultry Products.**—The Australian oversea trade in live or frozen poultry is insignificant, although the export of frozen poultry is increasing. During the past two years fairly large consignments were forwarded from New South Wales mainly to the United States of America. The imports and exports of eggs and egg-contents show a balance on the side of exports. The export trade in eggs has expanded considerably during the last three years, and exceeded three-quarters of a million dozen in 1921–22. The number of eggs imported into Australia during the last five years amounted to 76,829 dozen, of which number China supplied 60,717 dozen, or more than 79 per cent.

POULTRY PRODUCTS, TRADE.—AUSTRALIA, 1917–18 TO 1921–22.

Particulars.			1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
LIVE POULTRY.							
Imports	..	No.	753	693	721	484	663
"	..	£	383	878	1,564	850	1,170
Exports	..	No.	988	1,699	2,477	2,886	2,626
"	..	£	823	1,231	2,448	2,741	3,272
Net Exports	..	No.	235	1,006	1,756	2,402	1,963
"	..	£	440	353	884	1,891	2,102
FROZEN POULTRY.							
Imports	..	lbs.	931	3,752	10,273	4,087	2,712
"	..	£	39	208	602	328	178
Exports	..	pair	6,541	8,298	13,346	22,376	50,367
"	..	£	3,549	5,141	10,760	29,963	50,205
Net Exports	..	(a)	(a)	(a)	(a)	(a)	(a)
"	..	£	3,510	4,933	10,158	29,635	50,027
EGGS.							
Imports	..	doz.	9,171	2,633	4,015	27,452	33,558
"	..	£	434	169	230	1,802	1,994
Exports	..	doz.	16,136	8,409	211,034	413,602	808,849
"	..	£	1,462	746	17,461	53,932	75,857
Net Exports	..	doz.	6,965	5,776	207,019	386,150	755,291
"	..	£	1,028	577	17,231	52,130	73,863
EGG-CONTENTS.							
Imports	..	lbs.	8,669	344	4,992	23,898	26,590
"	..	£	1,708	94	1,523	4,446	4,091
Exports	..	lbs.	(a)	(a)	(a)	(a)	(a)
"	..	£	1,508	1,823	48,675	27,298	12,116
Net Exports	..	lbs.	(a)	(a)	(a)	(a)	(a)
"	..	£	- 200	1,729	47,152	22,852	8,025

NOTE.—The minus sign — signifies net imports. (a) Quantity not available.

§ 6. Bee Farming.

1. **General.**—As is the case with poultry-farming, bee-farming is frequently carried on in connexion with agriculture or dairying. The returns of honey from productive hives during 1921–22 gave an average of 67½ lbs. per hive, while the average quantity of wax was $\frac{4}{5}$ lb. per hive.

2. **Production of Honey and Beeswax.**—The number of hives and the production of honey and beeswax during the year 1921-22 are given in the following table :—

BEE-HIVES, HONEY, AND BEESWAX, 1921-22.

State.	Bee Hives.			Honey Produced.		Beeswax Produced.	
	Pro- ductive.	Unpro- ductive.	Total.	Quantity.	Value.	Quantity.	Value.
	No.	No.	No.	lbs.	£	lbs.	£
New South Wales ..	34,093	7,365	41,458	2,986,574	50,523	28,255	2,715
Victoria ..	38,593	11,554	50,147	2,712,675	50,863	32,737	3,274
Queensland ..	12,062	4,145	16,207	598,357	11,701	8,231	708
South Australia ..	13,501	6,606	20,107	791,324	10,716	9,108	721
Western Australia ..	6,453	1,474	7,927	196,440	4,213	3,980	314
Tasmania ..	4,314	2,276	6,590	82,920	2,764	1,976	197
Fed. Cap. Territory..	36	4	40	2,500	42	130	12
Australia ..	109,052	33,424	142,476	7,370,790	130,822	84,417	7,941

The table hereunder gives the production of honey and beeswax for the latest available five years :—

HONEY AND BEESWAX PRODUCTION, 1917-18 TO 1921-22.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Ter.	Australia.
HONEY.								
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1917-18	3,863,430	4,974,888	771,015	1,279,433	358,019	124,482	12,081	11,383,348
1918-19	879,356	1,644,447	410,182	1,683,725	415,616	151,605	420	5,185,351
1919-20	472,020	1,396,704	305,586	552,976	336,206	80,468	320	3,144,280
1920-21	1,441,617	1,724,942	426,662	1,821,811	149,226	85,125	1,760	5,651,143
1921-22	2,986,574	2,712,675	598,357	791,324	196,440	82,920	2,500	7,370,790
BEESWAX.								
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1917-18	53,314	64,980	11,519	12,942	5,459	2,857	28	151,099
1918-19	19,231	25,286	9,099	14,653	6,621	3,087	..	77,977
1919-20	12,195	24,735	7,215	7,350	6,611	2,329	..	60,435
1920-21	23,234	24,222	7,501	17,501	3,849	1,788	86	78,181
1921-22	28,255	32,737	8,231	9,108	3,980	1,976	130	84,417

The quantity of honey and beeswax produced naturally varies from year to year according to the conditions of the seasons. During the last five years New South Wales has produced 9,642,997 lbs. of honey and 136,229 lbs. of beeswax, while the Victorian figures amounted to 12,453,656 lbs. and 171,960 lbs. respectively for honey and beeswax. These two States together accounted for 67½ per cent. of the total production of honey, and 68 per cent. of the beeswax. Next in order of importance were South Australia, Queensland, and Western Australia.

3. Oversea Trade in Bee Products.—In normal years the local production of honey exceeds Australian requirements, and a considerable quantity is exported. During the past five years the value of the exports amounted to £350,213, or an annual average of £70,043, and it is believed that the export could be considerably increased. Australian honey exhibited at the Franco-British Exhibition in London in 1908 obtained the highest award. The more general use of frame hives in recent years has affected the production of wax, and as a result the quantity imported has exceeded that exported during each of the past five years.

BEE PRODUCTS.—IMPORTS, EXPORTS, ETC., AUSTRALIA, 1917-18 TO 1921-22.

Particulars.		1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
HONEY.						
Imports	.. lbs.	382	150	1,093	201,548	13,572
"	.. £	12	4	35	5,838	399
Exports	.. lbs.	3,199,691	8,747,760	588,384	97,541	94,471
"	.. £	79,225	248,685	18,815	5,328	4,448
Net Exports	.. lbs.	3,199,309	8,747,610	587,291	- 104,007	80,899
"	.. £	79,213	248,681	18,780	- 510	4,049

BEESWAX.

Imports	.. lbs.	54,686	36,136	26,149	28,235	223,441
"	.. £	4,842	3,493	1,969	2,452	12,786
Exports	.. lbs.	1,471	7,269	15,853	7,535	2,259
"	.. £	134	598	1,467	810	154
Net Exports	.. lbs.	- 53,215	- 28,867	- 10,296	- 20,700	- 221,182
"	.. £	- 4,708	- 2,895	- 502	- 1,642	- 12,632

NOTE.—The minus sign — signifies net imports.

§ 7. Value of Farmyard, Dairy, and Bee Products.

The value of the farmyard and dairy products raised in Australia in 1921 was as follows :—

FARMYARD, DAIRY, AND BEE PRODUCTS.—VALUE, 1921.

Products.	N.S.W. (a)	Victoria. (a)	Q'land.	S. Aust. (a)	W. Aust.	Tas.	N.T.	Fed. Cap. Ter. (a)	Australia.
	£	£	£	£	£	£	£	£	£
Milk, consumed as such ..	2,885,733	2,250,447	582,784	370,270	283,307	406,207	556	2,339	6,781,643
Butter ..	6,866,350	5,129,223	5,128,302	907,776	232,676	547,079	..	1,362	18,812,768
Cheese ..	294,245	203,678	794,058	100,977	32	42,787	..	..	1,435,777
Condensed and concentrated milk	319,218	2,074,616	782,639	..	..	..	..	..	3,176,473
Bacon and ham ..	957,497	1,325,383	798,809	270,141	132,278	97,161	..	447	3,581,716
Pork ..	420,291	245,000	113,233	143,570	84,461	65,335	..	..	1,071,890
Lard ..	25,246	28,480	32,965	11,450	11,786	5,077	..	12	115,016
Livestock ..	77,359	138,738	30,535	18,544	6,050	8,720	..	57	280,003
Poultry and eggs	2,650,000	4,406,750	429,983	1,027,634	208,429	300,000	..	(b)	9,022,796
Honey and wax	53,238	54,137	12,409	11,437	4,527	2,961	..	54	138,763
Total ..	14,549,177	15,856,452	8,705,717	2,861,799	963,546	1,475,327	556	4,271	44,416,845

(a) Year ended 30th June year following.

(b) Included with New South Wales.

§ 8. Exports of Australian Farmyard, Dairy and Bee Products.

The quantities and values of Australian farmyard, dairy, and bee products exported during each of the last five years are shown below :—

AUSTRALIAN FARMYARD, DAIRY AND BEE PRODUCTS.—EXPORTS,
1917-18 TO 1921-22.

Products.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
QUANTITY.					
Beeswax lbs.	1,450	7,252	14,438	5,838	830
Butter „	72,277,526	41,114,764	39,006,304	92,420,995	127,347,428
Cheese „	8,426,641	2,303,276	7,516,412	9,530,221	12,670,782
Egg albumen and yolk (a)	(a)	(a)	(a)	(a)	(a)
Eggs doz.	15,922	8,359	210,784	413,477	807,359
Feathers, undressed (a)	(a)	(a)	(a)	(a)	(a)
Honey lbs.	3,199,691	8,747,760	588,384	97,541	94,471
Lard „	1,465,352	6,016,383	7,931,014	3,118,105	2,908,595
Meats—					
Bacon and ham „	5,067,946	5,636,891	3,040,933	3,113,488	2,712,911
Frozen poultry pair	6,541	8,298	13,346	22,376	50,367
Frozen pork lbs.	262,503	839,557	371,397	163,303	152,584
Milk, concentrated and preserved „	25,581,708	27,934,998	35,548,082	37,281,554	36,378,109
Pigs, living No.	36	60	164	166	119
Poultry, living „	983	1,699	2,477	2,880	2,624
VALUE.					
Beeswax £	133	596	1,325	628	77
Butter £	4,904,417	3,193,086	3,301,695	11,067,104	7,968,078
Cheese £	350,791	118,850	377,398	514,128	438,350
Egg albumen and yolk £	854	1,823	48,675	27,055	12,061
Eggs £	1,450	743	17,434	53,920	75,764
Feathers, undressed £	61	793	1,133	956	956
Honey £	79,225	248,685	18,815	5,328	4,448
Lard £	56,292	205,675	374,641	153,084	88,694
Meats—					
Bacon and ham £	321,573	378,685	258,890	323,253	223,065
Frozen poultry £	3,549	5,141	10,760	29,963	50,205
Frozen pork £	11,915	40,325	19,149	9,370	7,414
Milk, concentrated and preserved £	1,025,895	1,091,889	1,605,161	2,184,761	2,131,279
Pigs, living £	209	479	1,044	1,199	990
Poultry, living £	819	1,231	2,448	2,731	3,268
Total	6,757,122	5,287,269	6,038,228	14,373,657	11,004,649

(a) Quantity not available.

§ 9. British Imports of Dairy Products.

1. Quantities and Values.—The following table gives the quantities and values of the principal dairy products imported into the United Kingdom during the years 1917 to 1921 :—

DAIRY PRODUCTS.—IMPORTS, UNITED KINGDOM, 1917 TO 1921.

Products.	1917.	1918.	1919.	1920.	1921
Butter cwts.	1,806,516	1,578,658	1,560,204	1,702,203	3,523,976
„ £	18,895,707	19,769,738	19,854,427	24,518,748	42,339,947
Cheese cwts.	2,946,066	2,357,103	2,118,250	2,750,260	2,817,465
„ £	19,462,390	15,905,858	15,170,620	20,633,946	17,446,521
Milk—Concentrated and preserved cwts.	1,700,511	2,707,761	3,347,645	2,127,199	2,350,610
„ £	6,623,666	13,472,544	17,088,310	13,083,697	11,303,566
Bacon and ham cwts.	7,747,740	12,028,505	10,094,352	5,935,981	6,804,875
„ £	48,769,759	103,410,221	89,681,616	53,339,250	51,745,149
Pork (a) cwts.	184,177	111,345	160,263	485,181	372,055
„ £	899,346	763,484	1,075,563	3,443,332	1,863,027

(a) Frozen, chilled, and salted.

2. **Butter.**—(i) *Imports.* Australia has for many years supplied a large proportion of the butter imported into the United Kingdom. The quantity forwarded in 1921 amounted to 964,226 cwts., or more than 27 per cent. of the total importation into the United Kingdom, and was exceeded only by that shipped from Denmark. The value of the Australian shipments was £11,479,626.

BUTTER IMPORTS.—UNITED KINGDOM, 1921.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ..	1,250,176	15,084,605	South African Union	21,941	231,800
Australia ..	964,226	11,479,626	Foreign Countries,		
New Zealand ..	709,381	8,494,063	n.e.i. ..	4,748	41,916
Argentine Republic	401,354	5,017,034	British Possessions		
Netherlands ..	63,065	744,245	n.e.i. ..	736	6,147
Russia ..	65,211	710,655			
Canada ..	43,138	529,856	Total ..	3,523,976	42,339,947

(ii) *London Prices.* The average price of the best quality Australian butter in London during the past ten years is shown in the following table :—

AUSTRALIAN BUTTER.—LONDON PRICES, 1913 TO 1922.

Year.	Average Top Price per Cwt.	Year.	Average Top Price per Cwt.
	s. d.		s. d.
1913	114 6	1918	(b) 252 0
1914	119 0	1919	(b) 252 0
1915	144 6	1920	(b) 299 9
1916	169 6	1921	234 0
1917	(a) 206 0	1922	183 0

(a) Proclaimed price.

(b) Flat rate for all imported butter.

Under contract the British Government purchased the surplus output of Australian butter during the period from 1st July 1918, to 31st July, 1920. The price paid was 175s. per cwt. for butter scoring 90 points, a shilling per cwt. being added or deducted as the grading score exceeded or fell below that standard. On the 1st August, 1920, the contract was extended for a further period, the price of butter having been increased to 240s. per cwt., subsequently raised to 272s., and the grading price being likewise increased to 1s. 6d. per cwt. This contract terminated on the 31st March, 1921, butter thenceforward being sold in open market.

3. **Cheese.**—The value of cheese imported into the United Kingdom in 1921 was £17,446,521, of which nearly nine million pounds' worth was received from New Zealand, and six and a half million pounds' worth from Canada. Small experimental shipments from Australia were made in 1908 and following years, fair prices being realized. The value of the imports from Australia has increased from £24,568 in 1913 to £501,912 in 1921.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1921 at £51,745,149, the United Kingdom received imports to the value of £23,739,332 from the United States, £16,932,105 from Denmark, and £6,873,563 from Canada. The import from Australia was small, experimental shipments only having been made during recent years.

5. **Pork.**—The total value of the United Kingdom imports of pork (including refrigerated, frozen, and salted) was £3,913,847 in 1921. There was no importation from Australia, the bulk of the supplies being forwarded from the Netherlands, the United States, and the Argentine Republic.

6. **Other Products.**—There was practically no shipment to the United Kingdom from Australia of beeswax, poultry, game, lard, or honey, but frozen rabbits to the value of £471,778, and eggs to the value of £139,076 were received from Australia in 1921.

CHAPTER XIX.

FORESTRY.

§ 1. Forestry.

1. **General.**—Economic forestry aims at the preservation and development of existing forest areas by safeguarding against fire and other destructive agencies, by expert supervision of the removal of timber, by judicious thinning, and by re-afforestation of denuded areas with suitable new growths of local or exotic origin. It provides also for the continuance of an indispensable form of national wealth by the afforestation of available bare lands adapted to the growth of various timbers. Though large areas of virgin forests still remain in Australia, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable, and it is not unlikely that climatological changes are caused thereby. It is stated that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest-covering beneficially regulates the effects of rainfall.

Successful planting of exotics in various parts of Australia has demonstrated that the climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world’s timber trees.

2. **Extent of Forests.**—(i) *Australia.* Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State :—

ESTIMATED FOREST AREA, 1921.

State.						Total Forest Area.	Percentage of Total Area.
						Acres.	%
New South Wales	..	..	..	..	..	11,000,000	5.54
Victoria	..	..	..	..	..	8,000,000	14.22
Queensland..	..	..	..	..	..	24,000,000	5.59
South Australia	..	..	..	..	..	3,800,000	1.56
Western Australia	..	..	..	..	..	16,428,000	2.63
Tasmania	..	..	..	..	..	9,000,000	53.64
Total (a)						72,228,000	4.60

(a) Excluding Northern Territory.

(ii) *Comparison with other Countries.* The absolute and relative forest areas of Australia and other countries are shown below :—

FOREST LANDS.—RELATIVE AREAS, VARIOUS COUNTRIES.

Country.	Total Wooded Area.	Percentage on Total Area.	Country.	Total Wooded Area.	Percentage on Total Area.
	Sq. Miles.	%		Sq. Miles.	%
United States ..	864,380	29.07	France	38,172	17.95
Russia (Europe) ..	601,852	36.31	Poland	32,781	21.99
Canada	390,625	10.47	Norway	27,434	21.95
India (British) ..	250,949	22.96	Rumania	26,436	21.62
Argentine Republic	162,623	14.10	Spain	18,965	9.74
Australia	120,625	4.06	Italy	18,088	16.35
French Indo-China	96,523	37.58	Czecho-Slovakia ..	17,996	33.17
Sweden	91,666	52.98	New Zealand ..	17,969	17.30
Japan	71,923	27.53	Austria	11,795	38.34
Germany	49,469	26.96	United Kingdom	4,662	3.83
Finland	48,988	32.75			

3. *Distribution.*—The characteristics of the forest areas are given in some detail for each State in Official Year Book No. 6, pp. 446–9. The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. In the coastal regions of parts of West and North-West Australia, and along the shores of the Great Australian Bight and Encounter Bay, there is little forest. The areas in the centre of the continent are thinly timbered.

Special articles relating to Australian Eucalyptus timbers will be found in Official Year Book No. 10, pp. 85–98.

§ 2. Forestry Departments.

1. *Functions.*—Each State has organized a separate Department or Commission specially charged with the control and management of the State forests and timber reserves. Extensive survey work is carried on with a view to the classification of forest lands and the proclamation of State forests. The forests are improved by systematic cutting and silvicultural treatment, by judicious thinning and ringbarking, and by the making of roads and the establishment of fire-breaks, together with the removal and destruction of debris, and stunted, diseased and suppressed growth. Provision is made for effective patrols in forest districts to check the ravages caused by fire, often due, it is believed, to carelessness. The training of forest officers, the conduct of research work, and the collection of forestry statistics are also undertaken by the Forestry Departments.

2. Forest Reservations.—At the Interstate Conference on Forestry, held at Hobart in 1920, the forestry authorities of the various States estimated that to meet the future requirements of Australia an area of 24,500,000 acres of indigenous forest lands will be necessary, this estimate being based on the following distribution among the States :—

					Acres.
New South Wales .. .. .	..	..	..	..	8,000,000
Victoria .. .. .	..	..	..	..	5,500,000
Queensland .. .. .	..	..	..	..	6,000,000
South Australia .. .. .	..	..	..	..	500,000
Western Australia .. .. .	..	..	..	..	3,000,000
Tasmania .. .. .	..	..	..	..	1,500,000
Total .. .. .	..	..	..	..	24,500,000

Having been endorsed by the Premiers' Conference held later in the same year, this area has been adopted as the Australian forest ration towards which the authorities are now aiming for permanent reservation. The progress that has been made in the various States to the end of June, 1922, is set out in the following table :—

AREA OF FOREST RESERVATIONS, 30th JUNE, 1922.

Particulars.	N.S.W.	Vic.	Q'land. (a)	S. Aust.	W. Aust.	Tas.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Dedicated State forests ..	5,371,994	3,401,738	1,320,647	190,474	45,888	14,040	10,344,781
Timber reserves	1,479,792	747,281	2,722,835	(b)	858,316	1,672,000	7,480,224
National parks	..	..	153,316	..	..	..	153,316
Total ..	6,851,786	4,149,019	4,196,798	190,474	904,204	1,686,040	17,978,321

(a) 31st December, 1921.

(b) Not available.

The area of State forests reserved in perpetuity amounted in June, 1922, to 10,344,781 acres, or 42 per cent. of the quota adopted for Australia, while the timber reserves, which may be cancelled at any time, embraced an area of 7,480,224 acres, making—with the addition of the Queensland National Parks—a total area of nearly 18,000,000 acres under the control of the various Forestry Departments throughout Australia. Of this area a considerable proportion consists of inaccessible mountainous country and cut-over lands, while the Australian quota recommended refers to merchantable forest only. The foresters of Australia are, therefore, faced with a difficult task in improving and preserving the existing forests, and in securing the reservation of further suitable forest country, if Australia is to have a permanent supply of accessible timber.

3. Sylvicultural Nurseries and Plantations.—Recognition of the necessity for systematic sylviculture has led to the creation in all of the States of a number of sylvicultural nurseries and plantations. The locality of these establishments, together with a brief statement of the nature of their activities, is given in previous issues of the Year Book. (Reference may be made to Official Year Book No. 6, pp. 451–3.) Details regarding forest nurseries and plantations, together with the number of persons employed in Forestry Departments, are as follows :—

SYLVICULTURAL NURSERIES AND PLANTATIONS, 1921-22.

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total.
State Forest Nurseries—							
Area (acres)	(b) 42	40	12	7	17	5	123
Plantations—							
Area planted during year .. (acres)	1,488	1,927	(a)	994	(a)	41	(c) 4,450
Area of effective plantations .. (acres)	3,736	8,557	800	25,080	(a)	41	(c) 38,214
Number of persons employed in Forestry Departments—							
Administrative	33	26	29	1	1	1	91
Professional	6	5	5	1	4	7	28
General	202	107	312	145	84	3	853

(a) Not available.

(b) Exclusive of area of local nurseries at plantations, &c.

(c) Incomplete.

4. Revenue and Expenditure.—The revenue and expenditure of the State Forestry Departments from 1917-18 to 1921-22 are given below :—

STATE FORESTRY DEPARTMENTS.—REVENUE AND EXPENDITURE, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
REVENUE.					
	£	£	£	£	£
New South Wales	70,969	97,592	147,041	190,742	217,841
Victoria	55,917	57,731	67,298	95,517	155,160
Queensland	66,660	71,985	100,584	145,802	220,950
South Australia	14,279	23,880	22,003	23,872	11,234
Western Australia	23,866	41,015	45,278	58,617	88,529
Tasmania	3,860	3,860	7,340	20,444	18,891
Total	235,582	296,063	389,544	534,994	712,605
	(a)				
EXPENDITURE.					
	£	£	£	£	£
New South Wales	77,688	121,162	134,997	179,540	186,588
Victoria	68,557	60,193	64,213	71,386	130,076
Queensland	13,930	21,877	35,158	72,718	201,865
South Australia	21,381	21,968	26,404	33,924	36,467
Western Australia	10,363	23,656	15,331	27,632	47,885
Tasmania	1,204	1,204	1,433	2,621	7,069
Total	193,123	250,060	277,536	387,821	609,950

(a) Including Northern Territory, £31.

5. **Instruction in Scientific Forestry.**—Several schools have been established in which, while general scientific instruction is imparted, special attention is paid to forestry. In the classes, theoretical forestry, botany, geology, physics, land surveying, etc., are taught; while in outside work trainees receive practical instruction in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. Courses of lectures are also given at various centres, and at some of the higher technical schools, members of the forest staffs are afforded opportunities of qualifying in special subjects. Methods of training, etc., are not uniform in the various States, and one of the prime objects of a Conference held in 1916 was the evolution of a system which, while aiming at uniformity, would be sufficiently elastic to provide for special needs in any State.

6. **Forest Congresses.**—Interstate Conferences on Forestry were held in 1911 and 1912, chiefly with a view of securing uniformity of management. An International Forest Congress was held at Paris in June, 1913, when a Professor of South Kensington Imperial College represented the Commonwealth Government. The papers and reports dealt chiefly with the threatened shortage of timber, and the measures necessary to avert the danger. An Imperial Forestry Conference was held in London in the summer of 1920, at which also Australia was represented. Important Interstate Forestry Conferences were held in Adelaide in May, 1916; at Perth in November, 1917; at Hobart in April, 1920, and at Brisbane in April, 1922.

§ 3. Production.

1. **Timber.**—Estimates of the quantity and value of local timber sawn and hewn in each State are given hereunder :—

LOCAL TIMBER SAWN AND HEWN, 1917-18 TO 1921-22.

State.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.
New South Wales ..	126,745	131,617	155,114	156,112	143,593
Victoria ..	78,984	91,540	99,142	113,215	112,008
Queensland (a) ..	111,663	118,436	144,389	136,005	112,987
South Australia ..	3,425	5,223	6,178	5,598	3,398
Western Australia (a) ..	76,931	83,881	121,685	131,271	163,991
Tasmania (a) ..	42,341	46,481	54,291	59,047	54,518
Total ..	(b) 440,164	477,178	580,799	601,248	590,495

(a) Year ended 31st December. (b) Including Northern Territory, 75,000 sup. feet.

2. **Other Forest Products.**—(i) *Eucalyptus Oil*. A considerable quantity of eucalyptus oil is produced each year, chiefly in Victoria, the product being used as a drug, and also in connexion with ore-flotation processes. Complete information regarding local production and consumption is not available. Oversea exports amounted in 1919-20 to £92,000, in 1920-21 to £107,000, and in 1921-22 to £24,000, the bulk of the product being forwarded to the United Kingdom. Large quantities have also been exported to the United States.

(ii) *Tan Barks*. In addition to the wattle bark, mentioned at the close of this chapter, a valuable tan bark is obtained from the mallet (*E. occidentalis*) of Western Australia. Its exploitation has, however, been so rapid that the available supply is now comparatively small.

3. **Value of Production.**—Though the valuation of the quantity of firewood consumed in Australia presents serious difficulty, an estimate of the total value of forest production is annually compiled with the following results for the past five years :—

VALUE OF FOREST PRODUCTION.—AUSTRALIA, 1917-18 TO 1921-22.

Production.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	£	£	£	£	£
Total ..	4,366,000	5,882,000	8,631,000	8,877,000	8,998,000

§ 4. Commercial Uses of Principal Australian Timbers.

1. **General.**—The uses of the more important Australian timbers are many and various, and are indicated in previous issues of this work. (See Official Year Book No. 6, pp. 454-6; and Official Year Book No. 10, Section III., § 7 and 8.)

The Commonwealth Government utilizes Australian woods for rifle stocks, telephone switch boards, aeroplane parts, etc. Queensland maple (*Flindersia chatawaiana*) is largely used for rifle stocks, and coachwood is available for the same purpose. Australian timber is also seasoned and stored, depots having been established by the Commonwealth Government at Canberra and Newington in New South Wales, and at Maribyrnong in Victoria; by State Governments at the principal centres; and by private enterprise as required.

2. **Lack of Uniformity in Nomenclature.**—Unfortunately the vernacular names applied to the gums, ironbarks, etc., in the various States, and even in different parts of the same State, do not always refer to identical timbers. The resulting confusion has not only been productive of loss, but it has, to some extent, prejudicially affected the timber trade. This subject is referred to at some length in the special article "Australian Eucalyptus Timbers," in Section III., § 7 and 8, in Official Year Book No. 10. At the 1916 Forestry Conference alluded to above, the matter came up for special consideration, and steps were taken to establish a uniform nomenclature.

§ 5. Oversea Trade.

1. **Imports.**—(i) *Dressed Timber.* The quantity and value of timber imports into Australia during the four years 1918-19 to 1921-22 inclusive are shown according to countries of origin in the following tables:—

DRESSED TIMBER.—IMPORTS, AUSTRALIA, 1918-19 TO 1921-22.

Country of Origin.	Quantity.				Value.			
	1918-19.	1919-20.	1920-21.	1921-22.	1918-19.	1919-20.	1920-21.	1921-22.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	20	105,970	4,750	230	3	584	34	21
Canada ..	303,635	348,385	2,285,721	1,761,394	3,241	3,557	36,750	15,218
India ..	..	..	19,530	200	..	..	3,055	1
Other British Countries ..	27,222	1,350	200	3,982	398	20	1	54
Norway ..	..	9,433,921	34,241,593	13,794,952	..	201,593	808,562	242,092
Sweden ..	532,845	4,251,630	12,883,503	9,094,863	9,900	87,779	325,864	120,127
United States ..	262,385	67,438	1,712,904	2,508,918	7,126	2,838	34,599	34,189
Other Foreign Countries ..	13,294	2,329	6,059	67,307	641	109	421	1,998
Total ..	1,139,401	14,211,023	51,154,260	27,231,846	21,309	296,480	1,209,286	413,700

The figures in the above table are exclusive of items such as architraves, veneers, etc., quantities for which are either not shown, or are expressed in dissimilar units in the Customs entries. The total value of the items so excluded, however, amounted to only £28,335 in 1921-22.

The bulk of the imports of dressed timber comes from Norway, Sweden, and the United States. Practically the whole of this timber consists of softwoods—deal and pine—used for lining, weatherboards, flooring, shelving, doors, box-making, etc.

(ii) *Undressed Timber.* Australian imports of undressed timber for the latest available four years are given hereunder:—

UNDRESSED TIMBER.—IMPORTS, AUSTRALIA, 1918-19 TO 1921-22.

Country of Origin.	Quantity.				Value.			
	1918-19.	1919-20.	1920-21.	1921-22.	1918-19.	1919-20.	1920-21.	1921-22.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	800	33,861	205,546	7,179	3	1,803	4,929	259
Canada	2,204,774	5,766,398	12,361,386	17,579,302	22,250	90,882	181,072	173,974
India	89,436	129,395	639,964	21,338	3,687	8,022	62,094	471
New Zealand	59,027,859	56,470,627	61,548,649	47,234,577	632,613	673,922	879,960	638,861
Straits Settlements	201,325	817,675	400,625	16,967	1,376	8,147	5,890	156
Other British Countries	186,607	802,860	1,234,127	1,853,670	1,382	8,504	10,452	13,839
Japan	2,927,688	6,362,400	5,727,148	3,943,538	68,377	188,623	210,152	86,686
Java	13,399	578,538	1,925,464	965,820	173	6,436	28,337	5,678
Norway	10,140	44,600	117,142	339,185	90	836	2,390	14,290
Sweden	..	165,934	2,114,819	218,002	..	2,609	52,507	3,070
United States	79,013,943	70,976,919	104,085,707	94,129,093	1,023,391	1,069,341	2,048,517	969,722
Other Foreign Countries	106,666	1,059,665	2,097,200	2,667,925	3,397	19,781	37,845	40,960
Total	143,782,637	143,208,872	192,457,777	168,976,596	1,756,739	2,078,906	3,524,145	1,947,966

(a) Including other Dutch East Indian possessions.

By far the larger proportion of the undressed timber imports also consists of softwoods such as yellow pine, redwood, and oregon from the United States and Canada ; kauri, rimu, and white pine from New Zealand ; pine from Japan, and (prior to the war) red deals from Russia, Norway, and Sweden. Amongst the hardwoods imported, the principal are oak from the United States of America and Japan, and teak from India.

2. *Exports.*—The quantity and value of undressed timber exported from 1917-18 to 1921-22 are given below, the countries of destination being also shown:—

UNDRESSED TIMBER.—EXPORTS AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	Quantity. (a)					Value.				
	1917-18	1918-19	1919-20	1920-21	1921-22	1917-18	1918-19	1919-20	1920-21	1921-22
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£	£
United Kingdom	1,000	1,000	1,000	1,000	1,000	428	4,458	4,617	181,451	116,017
Canada	27	536	375	18,078	8,824	6,504	2,364	1,405	912	3,030
Ceylon	316	103	59	32	136	..	..	10,448	3,316	61,759
Egypt	..	..	1,567	340	6,203	..	..	14,472	55,800	4,696
Hong Kong	..	..	2,171	6,890	402	..	..	2,969	4,954	6,580
India	1	188	272	395	462	8	2,197	3,500	88,650	91,358
Mauritius	..	100	467	10,220	9,161	..	650	2,342	22,014	50,591
New Zealand	277	..	458	1,834	3,706	2,310	..	..	..	..
Pacific Islands—	6,230	5,533	12,431	25,354	23,874	65,693	81,276	170,730	459,597	358,960
Fiji	918	428	742	1,011	845	12,638	4,490	11,224	17,238	12,604
Territory of New Guinea	99	41	226	158	95	1,378	906	4,254	4,254	2,401
Other Islands	315	272	665	896	586	3,952	4,157	13,763	20,684	12,597
Papua	132	99	140	189	99	1,720	1,877	3,155	10,990	2,391
South African Union	6,200	10,931	32,434	34,935	37,261	43,330	75,358	234,657	353,424	395,026
Straits Settlements	59	20	..	1	2,597	2	899	135	27	24
Belgium	..	..	..	2,597	1,766	..	..	..	24,897	18,790
China	..	..	760	3,420	1,939	..	..	5,996	39,682	19,796
Japan	704	105	355	625	128	11,827	2,276	6,921	8,380	2,478
Pacific Islands—	..	..	..	..	..	..	..	..	..	..
New Caledonia	305	92	155	55	51	3,782	1,502	3,081	1,600	1,234
Other Islands	158	225	85	140	62	2,052	3,373	1,689	3,648	1,426
U.S. of America	4,050	2,189	275	668	489	75,674	41,867	6,588	17,466	12,550
Other Foreign Countries	16	72	5	380	303	223	1,503	43	6,126	4,417
Total	19,807	20,934	53,642	108,217	96,394	232,418	228,389	502,881	1,325,083	1,178,725

(a) Exclusive of timber not measured in super. feet.

As the table shows, the bulk of the exports of undressed timber was consigned to South Africa, New Zealand, and the United Kingdom, and consisted of Australian hardwoods, which have earned an excellent reputation for such purposes as railway sleepers, harbour works, wood paving, etc. There was a notable increase in the quantity supplied to the United States of America in the later war years.

3. **Classification of Imports and Exports.**—(i) *General.* The quantities of timber classified according to varieties imported and exported during the year 1921–22 are given in the next table :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—QUANTITIES, AUSTRALIA, 1921–22.

Description.	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.
Veneers	sup. ft.	(a)	..	(a)
Dressed	"	27,231,846	447,350	26,784,496
Undressed	"	172,455,368	95,589,717	76,865,651
Logs	"	4,044,323	804,245	3,240,078
Palings	No.	..	258,700	—258,700
Pickets	"	214,950	4,156	210,794
Shingles	"	98,500	8,700	89,800
Staves—				
Dressed, etc.	"	210	5,162	—4,952
Undressed	"	1,515,389	..	1,515,389
Laths—				
For blinds	"	..	(a)	(a)
Other	"	15,158,156	..	15,158,156
Spokes, rims, felloes, etc.	"	(a)	(a)	(a)
Doors	"	2,010	(a)	(a)
Architraves, mouldings, etc.	lin. ft.	2,350	265,496	—263,146
Wood pulp	"	(a)	..	(a)
Other	"	(a)	..	(a)

NOTE.—The minus sign — denotes an excess of exports. (a) Quantity not available.

Similar particulars relative to the values of imports and exports during the year 1921–22 are shown hereunder :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—VALUES, AUSTRALIA, 1921–22.

Description.	Imports.	Exports.	Excess of Imports over Exports.
	£	£	£
Veneers	23,057	..	23,057
Dressed	413,700	12,427	401,273
Undressed	1,978,889	1,168,126	810,763
Logs	30,969	10,599	20,370
Palings .. .. .	..	3,638	— 3,638
Pickets	1,341	75	1,266
Shingles	592	44	548
Staves—			
Dressed, etc.	115	254	— 139
Undressed	13,095	..	13,095
Laths—			
For blinds .. .. .	..	435	— 435
Other	24,873	..	24,873
Spokes, rims, felloes, etc.	5,238	11,495	— 6,257
Doors	1,225	751	474
Architraves, mouldings, etc.	90	2,512	— 2,422
Wood pulp	105,418	..	105,418
Other	1,351	..	1,351
Total	2,599,953	1,210,356	1,389,597

NOTE.—The minus sign — denotes an excess of exports.

(ii) *Sandalwood*. A considerable amount of sandalwood is annually exported, principally from Western Australia to China, where it is highly prized by all classes, and is largely used for artistic and ceremonial purposes.

SANDALWOOD.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	Quantity.					Value.				
	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	ton.	ton.	ton.	ton.	ton.	£	£	£	£	£
United Kingdom..	..	..	20	1	4	..	..	385	110	267
Hong Kong ..	5,116	6,225	9,363	6,495	3,334	76,093	92,518	174,659	111,730	57,714
India ..	100	121	98	424	333	1,275	1,573	1,860	7,736	6,144
Straits Settlements	979	1,699	4,081	1,793	228	12,236	22,063	71,522	35,191	3,935
Other British Countries ..	..	1	..	..	2	..	15	..	..	36
China ..	739	1,474	1,300	2,419	575	9,857	18,767	18,307	39,798	7,611
Other Foreign Countries ..	92	271	35	7	6	4,481	4,009	626	136	123
Total ..	7,026	9,791	14,897	11,139	4,482	103,942	138,945	267,359	194,701	75,830

(iii) *Tan Bark*. Tan bark figures both as an export and import in the Australian trade returns, as the following tables show. The first table refers to exports :—

TAN BARK.—EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Country to which Exported.	Quantity.					Value.				
	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom..	..	1,220	3,700	360	1	..	860	2,561	202	1
New Zealand ..	95,192	27,320	60,900	56,360	17,047	45,007	13,801	37,616	39,356	11,927
Other British Possessions ..	208	..	..	100	..	72	..	..	88	..
Foreign Countries ..	1,745	60	7,780	8,400	822	611	14	4,050	7,084	534
Total ..	97,145	28,600	72,380	65,220	17,870	45,690	14,675	44,227	46,730	12,462

Prior to the war there was a fairly considerable export of tan bark to Germany and also to Belgium. The exports westward have naturally dwindled away, and at the present time New Zealand receives the largest share of the available export, while there is also some trade with Japan, China, and Java. During recent years the largest proportion of the exports consisted of wattle bark from Tasmania, Victoria and New South Wales.

A comparison of the imports and exports of tan bark during the last five years is given in the next table :—

TAN BARK.—IMPORTS AND EXPORTS, AUSTRALIA, 1917-18 TO 1921-22.

Particulars.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports	71,133	102,480	78,800	48,100	34,340
Exports	97,145	28,600	72,380	65,220	17,870
Excess of exports over imports ..	26,012	— 73,880	— 6,420	17,120	— 16,470
VALUES—	£	£	£	£	£
Imports	24,711	43,319	33,733	20,002	15,954
Exports	45,690	14,675	44,227	46,730	12,462
Excess of exports over imports ..	20,979	— 28,644	10,494	26,728	— 3,492

NOTE.—The minus sign — denotes excess of imports.

The imports consist almost exclusively of wattle bark from the plantations in South Africa. One variety of Australian wattle is found to flourish in the sandy belts near the coast, but it is the *Acacia decurrens*, var. *mollis*, which is chiefly relied upon for the production of wattle bark in the South African plantations. Seed has been tried from New South Wales, Tasmania, and Victoria, but it is stated that most of the seed is obtained from the best wattle bark areas in eastern Tasmania and western Victoria.

Two reasons are given to account for the success of the industry in South Africa. (a) It is found that the treeless, grassy highlands of Natal are specially suitable for wattle culture, and the trees can therefore be grown in rows and economically attended to, while the necessary bark sheds and other appurtenances can be placed in the most advantageous positions. (b) There is an abundance of cheap and efficient Hindu labour available for employment on the plantations.

CHAPTER XX.

FISHERIES.

§ 1. General.

1. **Fish Stocks.**—Australia possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as valuable species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatized for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

2. **Progress of Industry.**—(i) *Transport and Marketing.* Despite the abundance of edible fish, the progress of the fishery industry in Australia has been slow. Up to the present the questions of transport and marketing of the proved supplies have not been satisfactorily dealt with in the various States.

In New South Wales, as shown in § 5 hereinafter, the matter of exploiting and marketing trawlable fish was undertaken by the State Government, which also took steps to improve the conditions under which the ordinary coastal fishing is carried on. In Queensland, also, State trawling was undertaken in 1919, and some good trawling bottoms have been located and charted between Cape Moreton and Caloundra.

(ii) *Economic Investigations.* In many respects the fishing industry is capable of modification and development. Although some valuable work has been done by the State Governments in the way of experiment and culture, a uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government with a view to increasing the productiveness of Australian waters, and that uniform fisheries laws should be adopted by adjacent States.

All live fish imported into Australia are examined on shipboard in order to prevent the importation of undesirable fish.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., and their movements along the coast.

Fuller details regarding the activities of the States in fish-culture are given in Official Year Book No. 6, pp. 471–2.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompanied the F.I.S. *Endeavour* on various cruises. Specimens were collected, mounted for scientific purposes, and distributed to

other Australian Museums, a considerable number being put aside for the Commonwealth Fishery Museum. As pointed out later, however, this vessel was lost with all hands in 1914, and has not since been replaced.

3. Consumption of Fish.—It has been said that the Australians are not an “ichthyophagous” race, seeing that the annual consumption of fish per head of population in Great Britain is set down at 42 lbs., while in Australia it has been estimated at only 10 lbs. The comparatively heavy import of dried and preserved fish would appear to indicate that there is great scope for the development of the industry, which now seems to be ill-managed, the price to the consumer being high, while the fisherman’s gain is uncertain, and the system of distribution lacks method. Considerable improvement has, however, been effected in recent years, particularly in New South Wales (*vide* § 5 herein).

4. Oyster Fisheries.—Natural oyster beds yielding a product of excellent quality exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the output has been very materially augmented. The areas are leased by the Government to private persons, lengths of foreshore being taken up under oyster leases. In New South Wales and Queensland the industry has thriven, and small yields are obtained in South Australia and Victoria.

5. Pearl-shell, Pearls, Bêche-de-Mer, etc.—(i) *General.* Pearl-shelling is carried on in the tropical waters of Queensland, the Northern Territory, and Western Australia. The pearl-oyster inhabits the northern and western coastal waters from Cape York to Shark Bay, a length of shore of over 2,000 miles. The shells are marketed in considerable quantities, and pearls also are obtained in Queensland and Western Australia. The fishing is generally conducted with the aid of diving apparatus, in water varying from 4 to 20 fathoms in depth. In Queensland and the Northern Territory the bêche-de-mer industry is carried on, and tortoise-shell is obtained on the coasts. Experiments have been made in cultivating the pearl-oyster on suitable banks. In October, 1911, a pearl weighing 178 grains, and valued at £3,000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book No. 6, p. 463. Trochus-shell to the value of £41,698 and £7,383 was raised in Queensland during 1920 and 1921 respectively.

(ii) *Royal Commission on Pearl-shelling Industry.* In accordance with the “White Australia” policy it was originally determined that the employment of Asiatic labour in the pearl-shelling industry should be restricted, and ultimately cease, and it was proposed that after 31st December, 1913, permits to indent Asiatics for the pearling-fleet should no longer be issued. In view, however, of the disorganization of the industry occasioned by the war, the time was extended to the 30th June, 1918, after which date permits to introduce Asiatic labour were to be granted only in cases where the diver and tender of a boat were Europeans. Since the receipt of the Report of the Royal Commission, referred to hereunder, this proviso was, however, revoked.

In March, 1912, a Royal Commission to inquire into the pearling industry was appointed by the Commonwealth Government, and after visits to the Queensland and Western Australian waters, various sittings, and the issue of a progress report, presented its final report in 1916. The Commissioners stated that, though it might be practicable, they did not consider it advisable or profitable to attempt by any drastic methods to transfer the industry from Asiatics to Europeans. They further stated that, while the labour now employed is almost entirely Asiatic, they did not consider that the “White Australia” policy would be weakened or imperilled by allowing the industry to continue as at present conducted.

At Thursday Island the pearling industry is almost monopolized by Japanese.

§ 2. The Fishery Industry.

1. **Boats and Men Engaged, and Take.**—(i) *General Fisheries.* The returns have been compiled from particulars supplied by the State Departments, and while the data do not generally lend themselves to presentation on a uniform basis, the principal facts have been incorporated in the tables hereunder:—

GENERAL FISHERIES, 1921.

State or Territory.	No. of Boats Engaged.	Value of Boats and Equip-ment.	No. of Men Em-ployed.	Total Take of—		Value of Take.	
				Fish.	Spiny Lobster (Crayfish).	Fish.	Spiny Lobster (Crayfish).
	No.	£	No.	cwt.	doz.	£	£
New South Wales	971	70,938	g 3,524	6199,988	6,083	6404,943	c 24,449
Victoria (e) ..	858	105,385	1,279	100,308	17,830	135,150	12,660
Queensland ..	629	39,712	1,183	47,180	..	87,943	..
South Australia (e)	810	34,000	907	(a)	(a)	240,000	(f)
Western Australia	269	34,880	582	24,351	8,709	70,933	4,355
Tasmania (d) ..	145	13,475	361	doz. 53,058	5,185	9,496	1,865
Northern Territory(e)	2	90	10	102	..	205	..
Total (d) ..	3,684	298,480	7,846	..	..	948,670	43,329

(a) Not available. (b) Including 49,661 cwt. fish, valued at £104,289, obtained by State trawlers and private fishermen. (c) Including £12,283, the value of 4,239 cwt. prawns and 654 baskets of crabs. (d) Incomplete. (e) Year ended 30th June, 1922. (f) Included with fish. (g) Number of licensed fishermen.

Returns for the past five years are given in the table below:—

GENERAL FISHERIES.—AUSTRALIA, 1917 TO 1921.

Particulars.		1917.	1918.	1919.	1920.	1921.
No. of boats engaged ..	..	3,401	3,287	3,838	3,624	3,684
No. of men employed ..	..	6,773	6,515	7,774	7,634	7,846
Fish obtained—						
Quantity ..	cwt.	463,839	490,612	377,743	385,695	371,929
Value ..	£	695,718	755,059	877,120	939,568	948,670
Lobsters obtained—Value	£	28,603	32,250	26,896	44,885	43,329

NOTE.—See notes to previous table.

(ii) *Edible Oyster Fisheries.* The returns from oyster fisheries are given in the next table. Edible oysters are not found in Western Australia, and no information is available regarding the small production of local oysters in Tasmania:—

EDIBLE OYSTER FISHERIES (a), 1921.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Number of Leases.	Oysters Taken.	
					Quantity.	Value.
	No.	£	No.	No.	cwt.	£
New South Wales ..	489	20,738	470	3,870	37,656	64,884
Victoria (b) ..	(c)	(c)	(c)	20	1,660	1,384
Queensland ..	102	12,834	132	592	24,488	30,540
South Australia (c) ..	..	..	..	..	..	..
Total ..	..	..	..	d 4,482	d 63,804	d 96,808

(a) Practically no oyster fisheries in Western Australia, Tasmania, and Northern Territory. (b) Year ended 30th June, 1922. (c) Included with General Fisheries. (d) Exclusive of South Australia.

Returns for Australia for the last five years are given in the appended table :—

EDIBLE OYSTER FISHERIES.—AUSTRALIA, 1917 TO 1921.

Particulars.		1917.	1918.	1919.	1920.	1921.
No. of boats engaged	..	577	550	503	532	591
No. of men employed	..	640	598	492	539	602
Oysters obtained—						
Quantity	.. cwt.	74,313	78,668	78,430	72,767	63,804
Value	.. £	86,550	92,261	100,910	108,694	96,808

NOTE.—See notes to previous table.

(iii) *Pearl and Bêche-de-Mer Fisheries.* The pearling industry is carried on in the tropical waters of Queensland, Western Australia, and the Northern Territory. During the last few years the return from the pearling industry has been adversely affected by labour conditions, coupled with the restriction in the market consequent on the war. Some of the pearling fleets have transferred their operations to Dutch waters. Bêche-de-mer is obtained in Queensland and the Northern Territory, the product being exported to China.

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES, (a), 1921.

State or Territory.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Quantity of Pearl-shell obtained.	Value of Pearl-shell obtained.	Value of Pearls obtained.	Value of Bêche-de-mer obtained.	Value of Tor-toise-shell obtained.
	No.	£	No.	Tons.	£	£	£	£
Queensland (b) ..	112	56,000	781	188	26,212	(d)	50,152	880
Western Australia..	216	113,594	1,594	1,227	161,958	36,163	..	..
Northern Territory(c)	6	1,650	28	7	1,106	..	2,049	200
Australia ..	334	171,244	2,403	1,422	189,276	36,163	52,201	1,080

(a) No pearl-shelling industry in New South Wales, Victoria, South Australia, and Tasmania.
(b) Also trochus-shell to the value of £7,383. (c) Year ended 30th June, 1922. (d) Not available.

For obvious reasons the returns in regard to the value of pearls obtained can be regarded as rough approximations only. The trochus-shell raised in Queensland is used principally in the manufacture of "pearl" buttons.

Particulars regarding these fisheries for the last five years are given below :—

PEARL, PEARL-SHELL, AND BÊCHE-DE-MER FISHERIES.—AUSTRALIA, 1917 TO 1921.

Particulars.		1917.	1918.	1919.	1920.	1921.
No. of boats engaged	..	471	401	471	515	334
No. of men employed	..	3,615	2,935	3,453	3,738	2,403
Pearl-shell obtained—						
Quantity	.. tons	2,192	1,616	2,300	2,126	1,422
Value..	.. £	264,295	224,115	387,034	337,917	189,276
Pearls obtained (a)—						
Value..	.. £	39,333	63,487	74,212	68,610	36,163
Bêche-de-mer obtained —						
Quantity	.. tons	624	468	308	..	..
Value..	.. £	42,064	48,933	42,721	70,898	52,201
Tortoise-shell obtained—						
Quantity	.. lbs.	942	695	172	552	2,112
Value..	.. £	378	350	96	302	1,080
Trochus-shell obtained—						
Value..	.. £	21,800	37,886	30,280	41,698	7,383

(a) Incomplete; but as returned.

2. **Fish Preserving.**—To encourage the industry, the Federal Parliament provided a bounty of $\frac{1}{2}$ d. per lb. for fish preserved as prescribed during the ten years 1907–8 to 1916–17. The payment, which amounted to only £3,005 during the period, or at the rate of £300 per annum, failed to develop the industry, and the bounty was not renewed on its expiration in 1916–17.

3. **State Revenue from Fisheries.**—The revenue from fisheries in each State during the year 1921 is given hereunder :—

FISHERIES.—REVENUE, 1921.

State or Territory.	Licences.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ..	1,463	8,846	114	470	10,893
Victoria (a) ..	610	31	69	32	742
Queensland ..	2,366	3,441	23	..	5,830
South Australia (a) ..	1,000	..	2	..	1,002
Western Australia ..	3,097	788	223	..	4,108
Tasmania ..	602	..	41	84	727
Northern Territory (a) ..	26	..	..	..	26
Total ..	9,164	13,106	472	586	23,328

(a) Year ended 30th June, 1922.

Similar particulars for Australia for the last five years are given in the following table :—

FISHERIES.—REVENUE, AUSTRALIA, 1917 TO 1921.

Particulars.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Licences ..	9,080	8,903	10,959	11,760	9,164
Leases ..	12,420	12,646	11,969	13,432	13,106
Fines and Forfeitures ..	358	438	523	536	472
Other Sources ..	999	575	3,919	524	586
Total ..	22,857	22,562	27,370	26,252	23,328

§ 3. Oversea Trade in Fishery Products.

1. **Imports of Fish.**—The development of the local fishing industry leaves much to be desired, as is evident from the large imports. For the last five years the imports were as follows :—

FISH.—IMPORTS, AUSTRALIA, 1917–18 TO 1921–22.

Classification.	1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
Fresh (oysters) .. { cwt. 1,583 2,321 520 2,092 2,297					
£ 1,098 1,617 762 2,708 3,675					
Fresh, or preserved { cwt. 11,080 5,383 9,444 17,558 25,130					
by cold process { £ 26,306 15,144 39,796 81,126 107,999					
Potted .. { cwt. (a) (a) (a) (a) (a)					
£ 1,300 10,075 97,340 64,310 72,788					
Preserved in tins { cwt. 148,421 62,426 148,684 103,505 163,034					
£ 788,728 345,918 989,742 649,610 885,781					
Smoked, dried, and { cwt. 7,320 2,313 6,106 10,179 13,170					
n.e.i. { £ 35,602 15,863 38,298 52,774 59,038					
Total { cwt. (b) 168,404 72,443 164,754 133,334 203,631					
£ 853,034 388,617 1,165,938 850,528 1,129,281					

(a) Not available.

(b) Exclusive of potted fish.

Tinned fish constitutes by far the largest proportion of the imports, most of it consisting of salmon from the United States of America, Canada, Norway, and Alaska. The potted fish comes chiefly from the United Kingdom. New Zealand supplies the largest proportion of the fresh fish, the bulk of the remainder coming from the United Kingdom and Canada. The small import of oysters is supplied by New Zealand.

2. **Exports of Fish.**—The exports of local fish produce for the five years 1917–18 to 1921–22 are given hereunder :—

FISH (AUSTRALIAN PRODUCE).—EXPORTS, 1917–18 TO 1921–22.

Classification.		1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
Fish, fresh, smoked, or preserved by cold process	cwt.	983	530	790	10,193	9,865
	£	4,048	2,591	6,017	86,474	89,095
Preserved, in tins, dried, salted, etc.	cwt.	13,413	7,072	9,259	102	78
	£	57,254	45,342	66,255	195	306
Total	cwt.	14,396	7,602	10,049	10,295	9,943
	£	61,302	47,933	72,272	86,669	89,401

The quantity of fresh fish exported from Australia is trifling, and the amount of £89,401 shown in the table above consists chiefly of cured *bêche-de-mer* exported to Hong Kong from the Northern Territory.

3. **Exports of Pearl and Other Shell.**—The exports of pearl, tortoise, and trochus-shell, of Australian origin, are given hereunder for the five years 1917–18 to 1921–22 :—

**PEARL, TORTOISE, AND TROCHUS-SHELL.—EXPORTS, AUSTRALIA,
1917–18 TO 1921–22.**

Article.		1917–18.	1918–19.	1919–20.	1920–21.	1921–22.
Pearl-shell	cwt.	59,598	49,300	45,040	31,480	38,900
	£	347,964	316,154	462,152	319,143	317,623
Tortoise-shell	lbs.	1,157	239	1,542	2,922	1,938
	£	483	138	1,011	1,864	1,243
Trochus-shell	cwt.	..	..	26,000	11,900	14,320
	£	..	..	105,894	37,602	26,285

The bulk of the pearl-shell exported during 1921–22 was consigned to the United States of America and the United Kingdom, the respective values of the shipments amounting to £243,554 and £69,656, while trochus-shell to the value of £21,349 was despatched to Japan.

§ 4. The Commonwealth Department of Fisheries.

In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Experimental cruises were undertaken, which showed that Australia possesses an asset of considerable value in her sea fisheries. The *Endeavour* was unfortunately lost at sea, with all on board, at the end of 1914, and has not been replaced. A description of the trawling grounds discovered, data regarding oceanography to the east of Australia, and a list of the publications of the Department are given in pp. 333 to 335 of Year Book No. 14.

§ 5. The State Trawling Industry—New South Wales.

The State Trawling Industry was established in 1915, and fishing operations were conducted with seven steel steam trawlers. The catches were landed at Sydney and Newcastle, and the fish distributed through retail shops, of which there were fourteen in the Metropolitan area, one in Newcastle, and five in country towns. During the year ended 30th June, 1922, the State trawlers landed 2413 tons of fish, valued at £101,337. Early in the year 1923 the Government decided to discontinue trawling operations, and most of the assets have since been disposed of.

CHAPTER XXI.

MINERAL INDUSTRY.

§ 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities that first attracted population to Australia, and thus laid the foundation of its nationhood. Prior to 1851, the year when Hargraves' memorable discovery was made, coal and copper had both been mined to some extent, and the existence of deposits of other minerals, including gold, had been proved. But it was the news of the sensational finds of the precious metal in 1851 and the year immediately following that brought about a constant stream of immigration, and caused an increase in population from 221,000 at the end of 1841 to upwards of 1,168,000 at the end of 1861.

2. **Extent of Mineral Wealth.**—The extent of the total mineral wealth of Australia cannot yet be regarded as completely ascertained, as large areas of country still await systematic prospecting. The presence of considerable deposits of valuable minerals has long been known. Thus, coal was discovered in 1797, and a shipload was exported to Bengal in 1799, silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, radio-active ores, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, phosphate, clays, ochres, etc.; in building stones—sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones—diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc.

3. **Quantity and Value of Production during 1921.**—The quantities (where available) and the values of the principal minerals produced in each State, and in Australia as a whole during the year 1921, are given in the tables immediately following. It must be clearly understood that the figures quoted in these tables refer to the quantities and values of the various minerals in the form in which they were reported to the States Mines Departments, and represent amounts which the Mines Departments consider may fairly be taken as accruing to the mineral industry as such. They are not to be regarded as representative of Australia's potentiality as a producer of *metals*, this matter being dealt with separately in § 18 hereinafter. It may be explained, therefore, that the item pig-iron in New South Wales refers only to metal produced from locally-raised ore and so reported to the Mines Department. New South Wales is, of course, in normal times, a large producer of iron and steel from ironstone mined in South Australia. As the table shows, the latter State receives credit for this ironstone in its mineral returns, but the iron and steel produced therefrom cannot be apportioned to the mineral industry of New South Wales. Similarly lead, silver-lead, and zinc are credited in the form reported to the State of origin—chiefly New South Wales—although the actual metal extraction is carried out to a large extent elsewhere.

MINERAL PRODUCTION.—QUANTITIES, 1921.

Minerals.	Unit.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (a)	Australia.
Alunite ..	ton	520	..	..	15	..	..	..	535
Antimony ore ..	"	125	347	..	..	..	..	..	472
Arsenic ..	"	397	..	220	..	..	..	..	624
Asbestos ..	"	945	..	..	2	235	..	..	1,182
Barytes ..	"	200	..	..	1,269	1	..	..	1,470
Bismuth ..	cwt.	160	..	1	..	..	1	..	162
Brown coal ..	ton	..	79,224	..	..	..	..	..	79,224
Chromite ..	"	62	..	..	..	..	..	..	62
Coal ..	"	10,793,387	514,859	954,763	..	468,817	66,476	..	12,798,302
Cobalt ..	"	..	..	85	..	..	..	..	85
Copper (ingot and matte) ..	"	499	..	2,428	1,532	206	6,181	..	10,846
Copper ore ..	"	..	..	..	..	1,040	..	..	1,040
Diatomaceous earth ..	"	206	..	..	..	..	..	..	206
Gold ..	fine oz.	51,173	104,512	40,376	2,628	553,731	5,340	245	758,005
Gypsum ..	ton	300	11,139	..	34,383	664	..	..	46,486
Iron (pig) (c) ..	"	90,053	..	..	..	..	..	..	90,053
Iron oxide ..	"	3,109	..	..	..	..	..	..	3,109
Ironstone ..	"	7,473	..	4,061	506,993	..	..	..	518,527
Kaolin ..	"	2,386	2,142	..	..	..	..	..	4,528
Lead ..	"	20,353	..	1,057	..	2,156	1,435	..	25,001
Lead and silver ore, concentrates, etc. ..	"	53,507	..	..	..	..	..	..	53,507
Limestone flux ..	"	111,558	..	63,275	44,277	..	..	..	219,110
Magnesite ..	"	12,268	128	..	172	..	..	..	12,568
Manganese ore ..	"	3,515	10	833	1,596	16	..	..	5,970
Molybdenite ..	cwt.	..	100	175	..	..	..	..	275
Osmiridium ..	oz.	..	..	..	..	..	1,751	..	1,751
Phosphate ..	ton	200	1,541	369	5,079	..	..	..	7,189
Pigments ..	"	443	335	..	197	..	15	..	990
Platinum ..	oz.	249	..	..	..	..	..	..	249
Pyritic ore ..	ton	2,000	..	..	..	6,117	607	..	8,724
Salt ..	"	..	(b)	..	56,492	..	..	..	56,492
Shale (oil) ..	"	32,489	..	..	..	..	868	..	33,357
Silver ..	fine oz.	1,963,379	5,204	195,328	1,449	116,151	348,658	..	2,630,169
Tin and tin ore ..	ton	1,595	80	1,050	..	67	790	83	3,665
Wolfram ..	"	..	..	5	..	..	10	102	117
Zinc ores and concentrates ..	"	79,694	..	..	..	..	..	..	79,694

(a) Year ended 30th June, 1921.

(b) Not available for publication.

(c) See letterpress preceding this table.

The comparative value of the minerals raised in each State during 1921 is given in the following table:—

MINERAL PRODUCTION.—VALUE, 1921.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (b)	Australia.
	£	£	£	£	£	£	£	£
Alunite ..	2,080	..	..	60	..	..	..	2,140
Antimony ore ..	900	5,890	..	..	..	..	..	6,790
Arsenic ..	17,865	..	12,325	..	16	..	..	30,206
Asbestos ..	23,736	..	..	71	13,581	..	..	37,388
Barytes ..	600	..	..	4,465	18	..	..	5,083
Bismuth ..	912	..	21	..	..	21	..	954
Brown coal ..	..	31,074	..	..	..	..	..	31,074
Chromite ..	124	..	..	..	..	..	..	124
Coal ..	9,078,388	603,323	831,483	..	407,117	63,446	..	10,983,757
Cobalt ..	..	..	21,332	..	..	..	..	21,332
Copper (ingot and matte) ..	41,267	..	168,556	106,370	8,448	463,163	..	787,804
Copper ore ..	..	..	..	..	16,153	..	..	16,153
Diamonds ..	1,915	..	..	..	..	..	..	1,915
Diatomaceous earth ..	584	..	..	..	..	..	..	584
Gold ..	271,302	554,087	214,060	13,933	2,935,693	28,311	1,299	4,018,685
Gypsum ..	210	6,914	..	29,427	622	..	..	37,173
Iron (pig) (c) ..	639,376	..	..	..	..	..	..	639,376
Iron oxide ..	2,917	..	..	..	..	..	..	2,917
Ironstone ..	9,132	..	5,976	587,267	..	..	..	602,375
Kaolin ..	1,790	1,577	..	..	..	..	..	3,367
Lead ..	462,862	..	24,077	..	48,863	32,241	..	568,043
Lead and silver-lead ore, concentrates, etc. ..	539,339	..	..	..	..	..	..	539,339

MINERAL PRODUCTION VALUE, 1921—*continued.*

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (b)	Australia.
	£	£	£	£	£	£	£	£
Limestone flux ..	41,834	..	31,518	15,546	..	..	..	88,898
Magnesite ..	14,407	384	..	373	..	..	..	15,164
Manganese ore ..	10,545	100	4,710	9,774	145	..	..	25,274
Molybdenite ..	..	70	2,187	..	..	..	..	2,257
Opal ..	13,020	..	500	..	..	..	..	13,520
Osmiridium ..	..	..	..	..	..	42,935	..	42,935
Phosphate ..	50	1,541	1,570	6,203	..	..	..	9,364
Platinum ..	3,441	..	..	..	..	..	..	3,441
Pyritic ore ..	6,000	..	..	..	7,871	2,579	..	16,450
Pigments ..	544	375	..	1,328	..	56	..	2,303
Salt ..	..	(a)	..	127,107	..	..	..	127,107
Sapphires ..	2,976	..	46,524	..	..	..	..	49,500
Shale (oil) ..	77,380	..	..	..	..	1,506	..	78,886
Silver ..	325,163	862	30,111	240	18,658	57,576	..	432,610
Tin and tin ore ..	163,451	11,961	98,471	..	6,485	130,257	7,793	418,418
Wolfram ..	..	..	280	..	..	676	9,752	10,708
Zinc concentrates	283,455	..	..	..	..	..	..	283,455
Unenumerated ..	14,944	625	2,198	2,495	94	..	159	20,515
Total ..	12,052,509	1,218,783	1,495,899	904,659	3,463,764	822,767	19,003	19,977,384

(a) Not available for publication. (b) Year ended 30th June, 1921. (c) See letterpress page 791.

It may be pointed out in connexion with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick and pottery clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In some instances, moreover, the published information is of little value. By restricting the comparison to items in connexion with which properly comparable information can be obtained for each State, it is believed that a satisfactory estimate of the progress of the mineral industry can be more readily obtained. The items excluded from the total for New South Wales in 1921 consist of—lime, £84,050; marble, £2,100; Portland cement, £838,534; coke, £1,029,694, and brick and pottery clays £37,250. From the Queensland returns, marble, £3,093 has been deducted, and from South Australia, sulphuric acid, £660.

4. Value of Production, 1917 to 1921.—The value of the mineral production in each State during the five years 1917 to 1921 is given in the table hereunder :—

MINERAL PRODUCTION.—VALUE, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Australia.
	£	£	£	£	£	£	£	£
1917 ..	11,970,388	1,294,240	4,012,977	1,451,854	4,629,027	1,582,322	56,903	24,997,711
1918 ..	13,220,135	1,102,652	3,740,925	1,441,885	4,265,577	1,597,694	92,730	25,461,598
1919 ..	8,911,725	1,151,980	2,575,225	771,659	4,191,973	1,307,692	71,697	18,981,951
1920 ..	9,791,979	1,435,135	3,617,870	1,150,849	4,110,376	1,426,442	80,101	21,612,752
1921 ..	12,052,509	1,218,783	1,495,899	904,659	3,463,764	822,767	19,003	19,977,384

The heavy fall noticeable in 1919 in New South Wales was due chiefly to cessation of operations for a large portion of the year at the Broken Hill mines, and partly to the dry conditions prevailing over an extensive area of the State. In Queensland the falling-off in 1921 was occasioned by the low prices realised for the principal industrial metals. None of the copper companies in the Cloncurry district resumed operations, and Mount Morgan, which in previous years contributed about 30 per cent. of the State's mineral

yield, closed down early in the year. Copper returns for 1921 in South Australia were the lowest recorded since 1854, but there were increases in ironstone, manganese, gold, and silver. In Western Australia the gold yield in 1921 again showed a decline, being upwards of £539,000 less than in 1920. The returns for lead and silver fell away by nearly £123,000, while the value of tin exported decreased by nearly £43,000. High cost of production, coupled with low market prices for base metals are stated to be chiefly responsible for the decline. It was proposed to send out a well-equipped prospecting expedition early in 1922 to systematically examine a defined area where reports indicate the possibility of the existence of payable minerals. The collapse in the market for industrial metals in conjunction with the increased cost of production, brought about the fall in production during 1921 in Tasmania. The stagnation in the base metal industry is reflected in the Northern Territory returns for 1921. In the preceding year wolfram to the value of about £46,000 was produced, whereas less than £10,000 worth was recorded in 1921, while the production of tin declined from £28,000 in 1920 to about £8,000 in 1921.

5. **Total Production to end of 1921.**—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1921. The figures given in the table are also exclusive of the same items referred to in connexion with the preceding table. Thus the total for New South Wales falls short by £15,471,000 of that published by the State Department of Mines, the principal items excluded being coke, £6,874,000, cement, £6,215,000; lime, £756,000; and marble, £43,000.

MINERAL PRODUCTION.—VALUE TO END OF 1921.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor.Ter.(a)	Australia.
	£	£	£	£	£	£	£	Million. £
Gold ..	63,251,172	301,431,486	84,159,679	1,608,488	147,771,481	8,821,826	2,274,174	609
Silver and lead ..	89,340,109	261,040	3,247,724	377,921	1,770,863	6,963,701	62,515	102
Copper ..	15,297,345	216,656	24,307,144	32,709,458	1,660,643	16,048,518	231,710	91
Iron ..	4,146,918	15,641	471,784	2,888,057	36,712	52,110	..	8
Tin ..	12,505,748	903,544	9,900,890	..	1,484,041	15,218,996	520,189	40
Wolfram ..	271,642	11,885	1,061,321	301	1,441	172,293	216,281	2
Zinc ..	13,727,456	..	..	15,993	5,437	36,320	..	14
Coal ..	114,946,008	5,802,051	10,452,990	..	3,081,374	1,075,719	..	135
Other ..	6,881,164	678,415	2,272,429	2,223,195	101,262	546,412	28,438	13
Total ..	320,367,562	309,320,718	135,873,961	39,823,413	155,913,254	48,935,895	3,333,307	1,014

(a) To 30th June, 1921.

The "other" minerals in New South Wales include alunite, £195,587; antimony, £344,588; bismuth, £223,840; chrome, £113,425; diamonds, £142,184; limestone flux, £927,392; molybdenite, £214,007; opal, £1,511,204; scheelite, £192,375; and oil shale, £2,625,875. In the Victorian returns antimony ore was responsible for £555,055. The value for coal in this State includes £186,974 for brown coal. Included in "other" in the Queensland production were opal, £180,195; gems, £502,126; bismuth, £308,749; molybdenite, £404,452; and limestone flux, £636,070. The chief items in South Australian "other" minerals were salt, £1,386,146; limestone flux, £226,632; gypsum, £199,172; and phosphate, £123,589. In the Tasmanian returns limestone flux was responsible for £91,739, and osmiridium for £242,426, while the figures for recent years include values for iron pyrites.

6. **Decline in the Metalliferous Industry.**—On the 1st December, 1921, a Select Committee was appointed by the Legislative Assembly of New South Wales to inquire into and report upon the serious decline in the metalliferous industry. The result of the Committee's investigations was published in a Report issued in 1922, wherein the chief contributing causes of the decline in New South Wales and in Australia generally were summarized as follows:—(1) High cost of production. (2) Deterioration in ore values in existing mines. (3) Inadequate machinery. (4) High freights. (5) High treatment charges. (6) Imperfect labour conditions in mines. (7) Lack of new payable discoveries. (8) Lack of efficiently-supported prospecting.

§ 2. Gold.

1. **Discovery in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event “precipitated Australia into nationhood.” A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude its repetition in the present issue.

2. **Production at Various Periods.**—In the following table will be found the value of the gold raised in the several States and in Australia as a whole during each of the six decennial periods from 1851 to 1910, and in single years from 1911 to 1921, from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development, large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and this remark applies to some extent also to the returns for Western Australia and Tasmania.

GOLD.—VALUE OF PRODUCTION, 1851 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	£	£	£	£	£	£	£	£
1851-60..	11,530,583	93,337,052	14,565	..	..	788,564	..	105,670,764
1861-70..	13,676,103	65,106,264	2,076,494	..	..	12,174	..	80,871,035
1871-80..	8,576,654	40,625,188	10,733,048	579,068	..	700,048	79,022	61,293,028
1881-90..	4,306,541	28,413,792	13,843,081	246,668	178,473	1,514,921	713,345	49,216,821
1891-1900	10,332,120	29,904,152	23,989,359	219,931	22,308,524	2,338,336	906,988	89,999,410
1901-10..	9,569,492	30,136,686	23,412,395	310,080	75,540,415	2,566,170	473,871	142,009,109
1911 ..	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	10,551,624
1912 ..	702,129	2,039,464	1,477,979	28,000	5,448,385	161,300	22,671	9,879,928
1913 ..	635,703	1,847,475	1,128,768	27,800	5,581,701	141,876	13,250	9,376,573
1914 ..	528,873	1,755,236	1,059,674	26,581	5,237,353	111,475	9,754	8,728,946
1915 ..	562,819	1,397,793	1,060,703	25,830	5,140,228	78,784	3,781	8,269,938
1916 ..	459,370	1,090,194	913,951	33,000	4,508,532	67,072	3,861	7,075,980
1917 ..	349,038	857,500	761,639	30,334	4,121,645	61,577	3,677	6,185,410
1918 ..	369,743	674,655	567,371	26,252	3,723,183	44,724	2,229	5,408,157
1919 ..	336,240	691,632	618,101	16,465	3,748,882	39,252	4,234	5,454,806
1920 ..	275,109	859,461	648,168	9,546	3,475,392	35,134	5,282	5,308,092
1921 ..	271,302	554,087	214,060	13,933	2,935,693	28,311	1,299	4,018,685
Total ..	63,251,172	301,431,486	84,159,679	1,608,488	147,771,481	8,821,826	2,274,174	609,318,306

The value of the gold yield in 1921 was the lowest recorded since the discovery of the precious metal in 1851.

The amount of gold raised in Australia in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States the years in which the greatest yields were obtained were as follows:—New South Wales, 1852; Victoria, 1856; Queensland, 1900; South Australia, 1904, and Tasmania, 1899.

The following table shows the quantity in fine ounces of gold raised in each State and in Australia during each of the last five years, the value of one ounce fine being taken at £4 4s. 11 $\frac{5}{11}$ d., in 1917 and 1918, at £5 2s. 1 $\frac{1}{2}$ d. in 1919, at £5 12s. 6d. in 1920, and at £5 6s. 0 $\frac{1}{2}$ d. in 1921.

GOLD.—QUANTITY PRODUCED, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	Australia.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1917 ..	82,170	201,873	179,305	7,141	970,318	14,496	(a) 866	1,456,169
1918 ..	87,045	158,827	133,570	6,180	876,512	10,529	(a) 525	1,273,188
1919 ..	65,839	135,428	121,030	3,224	734,066	7,686	(a) 829	1,068,102
1920 ..	48,908	152,792	115,229	1,697	617,843	6,246	(a) 939	943,654
1921 ..	51,173	104,512	40,376	2,628	553,731	5,340	(a) 245	758,005

(a) Year ended 30th June.

Unfortunately the general decline which has characterized Australia's gold output for a number of years has not been checked by any new finds of importance. New South Wales and South Australia showed some improvement on the totals for 1920, but there were heavy falls in other States, especially in Queensland, where the low yield was due to the suspension of operations at Mount Morgan over the greater part of the year.

3. Changes in Relative Positions of States as Gold Producers.—A glance at the figures in the table showing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half, and so far as recent years are concerned more than half the entire yield of Australia. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, and maintained this pre-eminence to the end of 1920. South Australia has occupied the position of lowest contributor to the total gold yield since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of Australia was as follows:—

GOLD.—RELATIVE POSITION OF STATES AS PRODUCERS, 1912 TO 1921.

State.	Annual Average of Gold Production, 1912 to 1921.	Percentage on Total.	State.	Annual Average of Gold Production, 1912 to 1921.	Percentage on Total.
	Ozs.			Ozs.	
Total	1,569,983	100.0	New South Wales	101,524	6.5
Western Australia	985,366	62.8	Tasmania ..	17,625	1.1
Victoria	266,743	17.0	South Australia ..	5,412	0.3
Queensland ..	191,753	12.2	Northern Territory	1,560	0.1

4. Methods of Gold Mining adopted in Each State.—(i) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene and Pleistocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in permo-carboniferous conglomerates at Tallawang. The method of dredging is extensively used for winning gold from the beds of running streams, and from loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and practically all the auriferous rivers of New South Wales have been worked by dredges. Hydraulic sluicing is employed also in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 1,598 ozs. in 1921, the chief yields being—Hill End (Tambaroora and Turon District) 222 ozs.; Major's Creek (Southern District) 166 ozs.; Armidale (Peel and Uralla) 108 ozs.; and Windeyer (Mudgee) 100 ozs. The quantity obtained by dredging was 13,191 ozs.; the largest returns being obtained at Adelong (Tumut and Adelong District) 5,859 ozs.; Gundagai (Lachlan) 4,215 ozs.; Araluen (Southern) 1,631 ozs.; and Wellington (Mudgee) 1,200 ozs. During 1921 there were 11 bucket dredges and 1 pump dredge in operation, their combined value being £81,478. The quantity of gold won from quartz amounted to £19,882 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Cobar and Canbelego fields included therein being respectively 676 ozs. and 8,685 ozs. Next in order were Hill End, 2,016 ozs.; Cootamundra, 1,763 ozs.; Hillgrove, 1,346 ozs.; and Carcoar, 1,052 ozs.

(ii) *Victoria*. Lode mining predominates in Victoria, although gold is also obtained from alluvial workings, both surface and deep leads. Owing to the exhaustion of much of the payable auriferous area the yield has been on the down grade for the last fifteen years, and the return for 1921 was the lowest experienced since 1851. The deepest mines in Australia are found in the Bendigo district, where there are two shafts 4,614 and 4,318 feet deep respectively. (It may be interesting to note here that the deepest mine in the world is the Morro Velho belonging to the St. John del Ray Mining Co., in the State of Minas, Brazil, where the workings reach a vertical depth of 6,426 feet from the surface. One mine in South Africa is 5,900 feet deep, while two shafts on the Kolar goldfield in India reach 5,419 feet). A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Maryborough, Castlemaine, Ararat, Stawell, Gippsland, and Ballarat districts. The yields from alluvial and quartz respectively as returned (in crude ounces) from the chief mining districts of the State during last year, were as follows:—Ararat and Stawell, 4,722 and 168; Ballarat, 1,557 and 6,080; Beechworth, 11,149 and 19,331; Bendigo, 988 and 61,105; Castlemaine, 2,820 and 2,998; Gippsland, 2,285 and 548; Maryborough 748 and 380.

The largest output from quartz mining in the Bendigo district was furnished by the New Red, White, and Blue, with 9,237 ozs., value at £42,292; followed by the Carlisle, 7,445 ozs., £31,074; Constellation, 6,174 ozs., £28,504; Carlisle-Unity, 3,841 ozs., £20,464, and Hercules and Energetic, 2,917 ozs., £13,641. In the Beechworth district the Morning Star Co., at Wood's Point, returned 10,977 ozs., valued at £36,336; the Rose, Thistle and Shamrock at Harrietville, 3,215 ozs., £12,859; and the A.I. Gold Mines at Gaffney's Creek, 2,931 ozs., £12,480.

From alluvial the principal yield was obtained by Cock's Pioneer Gold and Tin Mines, with 5,591 ozs., valued at £23,365. This Company, which operates in the Beechworth district also produced about £11,000 worth of tin during the year. The New Langi Logan and the Langi Logan South at Ararat returned yields valued at £9,420 and £6,508 respectively.

(iii) *Queensland*. Operations in Queensland are chiefly confined to reefing, and to the production of gold in connexion with the smelting of copper and other ores, the yield from alluvial in 1921 being only 353 ozs., while the quantity produced from stone treated was 20,331 ozs.; from copper and other ores 17,889 ozs.; and from old tailings 1,803 ozs.; making a total production of 40,376 ozs. The yields from the principal fields were—Mount Morgan, 17,494 ozs.; Charters Towers, 6,660 ozs.; Gympie, 6,387 ozs.; Chillagoe, 3,274 ozs.; and Etheridge, 2,402 ozs. As pointed out previously, the cessation of operations at Mount Morgan was chiefly responsible for the very low yield in 1921, the production from this field being less than 18,000 ozs. as compared with nearly 91,000 ozs. in the preceding year.

(iv) *South Australia*. In South Australia alluvial gold was worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpia, in the northern area. The battery and cyanide returns as published in the *Mining Review* show that the chief producing centres in 1921 were Deloraine and Tarcoola.

(v) *Western Australia*. The auriferous deposits of Western Australia may be grouped under three headings—(1) superficial deposits, (2) deposits in beds of conglomerate, and (3) lode and vein deposits. The first class includes a number of deposits of alluvial type, either in the beds of existing watercourses or in deep leads, up to 100 feet or more below present surface level. Associated with these are deposits of crystalline gold in "pug," oxide of iron, and soft weathered portions of underlying bed rock. Considerable areas of auriferous surface soil are also found, and these have apparently originated from the denudation by weathering of the bed rock and its associated veins. The shallow surface deposits have been worked by ground sluicing wherever water was available, but most of the ground has been worked by "dry-blowing." The pug and clayey bedrock are usually treated in puddling machines. In regard to (2) it may be noted that in several localities on the Pilbara goldfield and in one on the Yalgoo, gold has been found in conglomerate of the Nullagine series of rocks, now tentatively accepted as of Cambrian age. The gold is crystalline and is confined to the interstitial cementing material. Occasional occurrences of gold are met with in laterite conglomerate of tertiary and post tertiary age, and at Kintore in conglomerate of the same age. Lode and vein deposits alluded to in (3) are found in great variety in Western Australia. The

gold is always found associated with iron pyrites in the unoxidized portions of the lodes, and often also with copper pyrites, arsenical pyrites and galena. Tellurides of gold occur at times. There were decreases in the tonnage of ore treated on all the fields in 1921 excepting Broad Arrow, North-East Coolgardie, and Phillips River, where small increases were recorded. The yields from the principal fields in order of importance were as follows:—East Coolgardie, 378,430 ozs.; Murchison, 41,257 ozs.; Mt. Margaret, 20,804 ozs.; Yilgarn, 19,242 ozs.; East Murchison, 18,762 ozs.; North Coolgardie, 10,640 ozs. Coolgardie, 9,548 ozs.; Broad Arrow, 8,875 ozs.; Dundas, 5,456 ozs.; and North-East Coolgardie, 4,148 ozs. Of the total yield of 526,000 ozs. reported to the Mines Department, 520,000 ozs. were obtained from ore treated, and about 4,000 ozs., from dollied and specimens while the return from alluvial was a little over 700 ozs. The total referred to differs somewhat from that quoted in the first table in this chapter, which represents gold exported and minted. It may be noted here that the total amount of dividends paid by Western Australian gold mining companies to the end of the year 1921 exceeded 28 millions.

Western Australia reached its zenith as a gold-producer in 1903, when the output was valued at £8,771,000, but since then there has been a more or less steady decline until in 1921 the total had dropped to £2,936,000. Three causes may be adduced to account for this falling-off—(1) Exhaustion of known rich deposits. (2) Unwise development, *i.e.*, “picking the eyes” of good mines. (3) Increased cost of stores, equipment and labour, rendering it unprofitable to treat low-grade ores.

(vi) *Tasmania*. The yield in Tasmania is chiefly obtained from reefing, and the returns from the principal districts in 1921 were as follows:—North-West and West Coasts, 4,714 ozs.; Mathinna, 568 ozs.; Mt. Cameron, Mt. Victoria, and Warrentinna, 199 ozs.; Beaconsfield, 121 ozs.; and smaller quantities from Mt. Claude, Lefroy, and Lisle Golconda. The New Golden Gate Mine at Mathinna is now practically the only gold mine in operation in the State.

The total production was equal to 5,340 ozs. fine. During 1921 the blister copper produced by the Mt. Lyell Mining and Railway Co. Ltd. contained approximately 4,646 ozs. of gold.

(vii) *Northern Territory*. The production for 1921 amounted to only 245 ozs. It is stated that the potentialities of the older fields have by no means been exhausted, although a revival of the industry depends on the expenditure of large sums of money, either by the Government or by mining speculators, on developmental work. Including Chinese, only 10 miners were engaged in the search for gold in 1921.

5. **Remarkable Masses of Gold.**—Allusion has already been made in preceding Year Books to the discovery of “nuggets” and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue. (See Year Book No. 4, page 500.)

6. **Modes of Occurrence of Gold in Australia.**—This subject has been alluded to at some length in earlier issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. **Place of Australia in the World's Gold Production.**—In the table given below will be found the estimated value of the world's gold production, and the share of Australia therein during the five years 1917 to 1921. The figures given in the table have been compiled chiefly from returns obtained directly by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

GOLD.—WORLD'S PRODUCTION, 1917 TO 1921.

Year.				World's Production of Gold.	Gold Produced in Australia.	Percentage of Australia on Total.
				£	£	%
1917	..	..	..	87,734,000	6,185,000	7.05
1918	..	..	..	77,306,000	5,408,000	7.00
1919	..	..	..	89,723,000	5,454,000	6.08
1920	..	..	..	90,076,000	5,305,000	5.89
1921	..	..	..	83,069,000	4,018,000	4.84

The value of the gold yield in the ten chief producing countries during each of the five years 1917 to 1921 is given in the table hereunder. Particulars of the quantity and value of the gold production for all countries for the ten years 1912-21 will be found in the Bulletin of Australian Production issued by this Bureau.

GOLD.—PRODUCTION, CHIEF COUNTRIES, 1917 TO 1921.

Country.	1917.	1918.	1919.	1920.	1921.
	£	£	£	£	£
Transvaal	38,306,000	35,759,000	42,548,000	45,890,000	43,096,000
United States	16,912,000	13,841,000	14,695,000	13,581,000	12,519,000
Canada	3,138,000	2,972,000	3,916,000	4,303,000	4,911,000
Australia	6,185,000	5,408,000	5,454,000	5,305,000	4,018,000
Mexico	3,215,000	3,457,000	3,873,000	4,154,000	3,626,000
Rhodesia	3,544,000	2,682,000	3,030,000	3,108,000	3,104,000
India	2,222,000	2,060,000	2,304,000	2,609,000	2,073,000
Colombia	1,031,000	959,000	1,482,000	1,578,000	1,539,000
Japan	1,185,000	1,159,000	1,246,000	1,337,000	1,281,000
Gold Coast	1,549,000	1,338,000	1,508,000	1,167,000	1,078,000

For the first two years given in the above table the values quoted are based on a fine ounce value of £4 4s. 11⁵/₁₁d. For the last three years, however, it has been deemed advisable to apportion values in accordance with Australian currency, i.e. at £5 2s. 1¹/₅d. for 1919, £5 12s. 6d. for 1920, and £5 6s. 0³/₈d. for 1921.

The next table shows the average yearly value in order of importance of the yield in the chief gold-producing countries for the decennium 1912-21 :—

GOLD.—AVERAGE ANNUAL PRODUCTION, CHIEF COUNTRIES, 1912 TO 1921.

Country.	Value.	Country.	Value.
	£		£
Transvaal	39,543,000	Mexico	3,022,000
United States	16,718,000	India	2,284,000
Australia	6,970,000	Gold Coast	1,488,000
Russia	3,672,000	Colombia	1,199,000
Canada	3,639,000	Japan	1,180,000
Rhodesia	3,260,000	New Zealand	1,037,000

The comparison has been restricted to countries where the average for the period is in excess of a million sterling.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shown in the following table :—

GOLD MINING.—PERSONS EMPLOYED, 1901 AND 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Total.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1917 ..	1,823	6,069	1,375	150	8,752	155	92	18,416
1918 ..	2,540	3,547	929	100	7,790	125	84	15,115
1919 ..	1,656	3,065	792	100	7,242	73	60	12,988
1920 ..	1,712	3,742	611	100	7,087	48	20	13,320
1921 ..	1,516	3,050	722	100	6,019	67	10	11,484

§ 3. Platinum and Platinoid Metals.

1. **Platinum.**—(i) *New South Wales.* The deposits at present worked in the State are situated at Platina in the Fifield division, near Parkes, and the production in 1921 amounted to 249 ozs., valued at £3,441, while the total production recorded for the period 1894 to 1921 amounted to 15,938 ozs., valued at £67,847. The old lead is practically exhausted, but vigorous prospecting has taken place in other areas in the division.

(ii) *Victoria.* In Gippsland the metal has been found in association with copper, and 127 ozs. were produced in 1913, but there was no production in recent years.

(iii) *Queensland.* Platinum associated with osmiridium has been found in the beach sands between Southport and Currumbin, in creeks on the Russell gold-field near Innisfail, and in alluvial deposits on the Gympie gold-field, but no production has been recorded.

2. **Osmium, Iridium, etc.**—(i) *New South Wales.* Small quantities of osmium, iridium, and rhodium are found in various localities. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban; on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(ii) *Tasmania.* For many years osmiridium has been known to exist in the bed of the Savage River, on the West Coast, and in rivulets and creeks in the serpentine country. The first recorded production was in 1910, when 120 ozs., valued at £530, or £4 8s. 4d. per oz., were raised. In 1914 the yield had increased to 1,019 ozs., valued at £10,076, or nearly £9 18s. per oz. From 1915 to 1917 the amount raised fell off considerably, owing to difficulty in disposing of the metal, but in 1918 there was an increase to 1,607 ozs., valued at £44,833; while in 1920 the 2,009 ozs. produced returned £77,114, or over £38 7s. 8d. per oz. In October of that year as much as £42 per oz. was obtained. For 1921 the production was 1,751 ozs., valued at £42,935, or about £24 10s. per oz. The price obtained in 1921, varied from £35 in January to £27 10s. in April, May, and June, to £23 in July and August, and to £20 from September to the close of the year.

§ 4. Silver and Lead.

1. **Occurrence in Each State.**—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. 1 to 5, but considerations of space preclude the repetition of this matter in the present volume.

2. **Development of Silver Mining.**—The value of the production of silver, silver-lead and ore, and lead from each State during the five years ending 1921 is given hereunder:—

SILVER AND LEAD.—PRODUCTION, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	£	£	£	£	£	£	£	£
1917 ..	5,110,096	1,406	55,181	12,351	178,872	152,122	(a)275	5,510,303
1918 ..	5,739,509	1,319	36,645	10,492	189,636	127,176	(a)200	6,104,977
1919 ..	1,647,878	1,607	28,511	180	107,508	136,234	(a)132	1,922,050
1920 ..	123,481	1,714	135,559	2,646	190,484	309,035	(a)299	763,218
1921 ..	1,327,364	862	54,188	240	67,521	89,817	..	1,539,992

(a) Year ended 30th June.

The heavy falling-off in the production for 1919 and 1920 as compared with previous years was due to the suspension of operations owing to industrial troubles at the principal mines on the Broken Hill field. In addition to causing a cessation of mining operations and treatment of tailings on the Broken Hill field, the smelting works at Cockle Creek, upon which most of the silver-lead mines in other parts of the State depend for the sale of their ores, were forced to close. The resumption of normal production in 1921 by the mines on the Broken Hill field was largely hindered by the low price of lead, and the destruction by fire of the smelting works at Port Pirie.

It must be understood that the totals for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it may be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and the Mines Department considers, therefore, that the State should not take full credit for the finished product. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity of these metals locally produced, and the average contents by assay of concentrates exported during the last five years, will show, as regards New South Wales, the estimated total production and the value accruing to Australia from the three metals:—

SILVER-LEAD MINES.—NEW SOUTH WALES, TOTAL PRODUCTION, 1917 TO 1921.

Year.	Metal Produced within Australia.				Contents of Concentrates Exported.			
	Silver.	Lead.	Zinc.	Value.	Silver.	Lead.	Zinc.	Value.
	ozs. fine.	tons.	tons.	£	ozs. fine.	tons.	tons.	£
1917 ..	7,562,286	138,006	4,694	5,765,094	983,693	6,181	43,912	668,934
1918 ..	8,724,018	155,306	5,622	6,744,034	535,943	3,178	21,926	232,210
1919 ..	5,886,947	80,175	(a)7,119	4,109,466	417,871	2,425	18,146	253,751
1920 ..	196,111	1,749	(a)10,565	515,728	479,221	3,025	21,742	274,061
1921 ..	3,624,413	47,426	(a)1,425	1,723,864	617,477	6,539	19,272	261,238

(a) Including Zinc Oxide and Zinc Lead Oxide.

The figures given above are quoted on the authority of the Mines Department of New South Wales.

3. Sources of Production.—Broken Hill, in New South Wales, is the great centre of silver production in Australia.

(i) *New South Wales.* (a) *Broken Hill.* A description of the silver-bearing area in this district is given in earlier issues of the Year Book. During 1913 the output of ore from the mines in this division amounted to 1,744,000 tons, the highest recorded in the history of the field, but owing to the dislocation caused by the war the quantity raised in 1914 decreased to 1,442,000 tons. For the four years 1915 to 1918 the ore raised averaged over 1,200,000 tons, but, owing to the cessation of operations through industrial troubles and the fall in the price of metals the production in 1919 dwindled to 415,400 tons, and in 1920, when operations were carried on for a few weeks only, to 38,661 tons. In 1921 the output was 317,333 tons, of which 316,302 tons were sulphide and 1,031 tons oxidized ore.

Although the returns are not complete in all cases, the following table relating to the companies controlling the principal mines at Broken Hill will give some idea of the richness of the field:—

SILVER.—BROKEN HILL RETURNS TO END OF 1921.

Mine.	Value of Output to end of 1921.	Dividends and Bonuses Paid to end of 1921.
	£	£
Broken Hill Proprietary Co. Ltd.	48,380,736	12,453,449
Broken Hill Proprietary Block 14 Co. Ltd.	3,922,203	632,160
British Broken Hill Proprietary Co. Ltd.	4,895,825	821,280
Broken Hill Proprietary Block 10 Co. Ltd.	4,926,918	1,432,500
Sulphide Corporation Ltd. (Central Mine)	21,325,964	2,709,375
Broken Hill South Ltd.	10,702,724	2,535,000
North Broken Hill Ltd.	6,731,034	1,978,940
Broken Hill Junction Lead Mining Co.	1,149,800	87,500
Junction North Broken Hill Mine	2,639,679	160,814
The Zinc Corporation Ltd.	2,987,089	10,000
Barrier South Ltd.	151,517	50,000
Totals	107,813,489	22,871,018

The returns relating to dividends and bonuses paid are exclusive of £1,744,000 representing the nominal value of shares in Block 14, British, and Block 10 companies, allotted to shareholders of Broken Hill Proprietary Company. If the output of the companies engaged in treating the tailings, etc., be taken into consideration the totals for output and dividends shown in the table would be increased to nearly 114 millions and 27 millions respectively. The authorized capital of the various companies amounted to £7,637,000.

(b) *Yerranderie*. The mines in the Yerranderie division in the Southern Mining District produced 2,912 tons of ore in 1921, yielding 250,000 ozs. of silver, besides 343 ozs. of gold and 552 tons of lead, the total production being valued at £50,574. These figures are about £38,000 lower than in 1920, the decline being due to the low price of lead coupled with the heavy costs of production, transport, and treatment.

(c) *Cobar*. A considerable quantity of silver is obtained from the Great Cobar Mine and attached properties, the production in 1921 amounting to 79,868 ozs.

(d) *Sunny Corner*. In this division of the Bathurst Mining District 1,200 tons of ore were raised, from which 12,800 ozs. of silver and 120 ozs. of gold were produced in 1921.

(e) *Other Areas*. Small quantities were produced during the year in various other areas, but operations were greatly reduced owing to the heavy fall in the prices of silver and lead.

(ii) *Victoria*. The silver produced in 1921 amounted to 5,204 ozs., valued at £862, and was obtained in the refining of gold at the Melbourne Mint.

(iii) *Queensland*. The yields from the chief silver and lead producing centres in 1921 were as follows:—Chillagoe, silver £14,864, lead £20,070; Herberton, silver £3,480, lead £1,366; Stanthorpe, silver £4,609; Brisbane, silver £2,108, lead £1,929; Etheridge, silver £2,089. Lead did not suffer to such an extent as other metals from the fall in prices during 1921, and production was greatest at Mungana in the Chillagoe field, where the Girofla Mine, held on tribute by the State, was the chief centre of activity. The production of silver from the Etheridge and Mount Morgan fields fell off considerably in 1921.

(iv) *South Australia*. Rich specimens of silver ore have been discovered at Miltalie and Poonana, in the Franklin Harbour district, also at Mount Malvern and Olivaster, near Rapid Bay, and in the vicinity of Blinman and Farina. The surrounding district is also highly mineralized, but, so far, has not been thoroughly prospected. Attention has recently been devoted to the silver-lead ores at Eukaby, near Baratta. The production of silver and silver-lead ore in 1921 was valued at £240.

(v) *Western Australia*. The quantity of silver obtained as a by-product and exported in 1921 was 116,151 ozs., valued at £18,658. In addition, 2,156 tons of pig lead, valued at £48,863, were exported, but there were no exports during the year of lead and silver lead ore and concentrates. The production of lead ore from the Northampton mineral field amounted in 1921 to 10,330 tons.

(vi) *Tasmania*. The silver produced in 1921 amounted to 348,658 ozs., valued at £57,576, and the lead to 1,435 tons, valued at £32,341. Of the silver, Mt. Lyell returned 183,021 ozs.; the Zeehan Mines, 87,387 ozs.; North Mt. Farrell, 34,402 ozs.; the Magnet Mines, 32,502 ozs.; and Round Hill, 11,346 ozs. The principal producers of lead were the Zeehan Mines, 698 tons; North Mt. Farrell, 377 tons; Magnet Mines, 195 tons; and Round Hill, 165 tons.

(vii) *Northern Territory*. Silver-lead ores are found near Pine Creek, and at Mount Shoebridge near Brock's Creek railway station. There are a number of fair-sized galena lodes in the Pine Creek and McArthur River districts, but owing to costs of transport and realization little attention is devoted to them. No production of silver-lead ores was recorded in 1921.

4. **World's Production.**—The world's production of silver during the last five years or which particulars are available is estimated to have been as follows :—

SILVER.—WORLD'S PRODUCTION, 1917 TO 1921.

Total.	1917	1918.	1919.	1920.	1921.
World's production in 1,000 fine ozs	174,188	197,395	176,457	174,612	168,000

The share of Australia in the world's silver production in 1919 was estimated at 7,800,000 ozs., or about $4\frac{1}{2}$ per cent. on the total production, but in 1921, owing to the cessation of operations at the Broken Hill field, the total local extraction fell to 4,573,000 ozs., and the estimated silver contents of the ores, bullion, and concentrates exported to 732,000 ozs., the total being a little over 3 per cent. on the world's production. The figures for the world's production are given on the authority of *The Mineral Industry*.

Arranged in order of importance the estimated yields in 1921 from the chief silver-producing countries were as follows :—

SILVER.—PRODUCTION, CHIEF COUNTRIES, 1921.

Country.	Production.	Country.	Production.
	Fine ozs. (·000 omitted.)		Fine ozs. (·000 omitted.)
United States	62,700	Burma	3,500
Mexico	50,360	Central America	2,500
South America	14,000	Dutch East Indies	1,100
Australia	5,300	Congo, etc.	200
Japan	5,000	Rhodesia	150
Spain and other European Countries	5,000	China	100

5. **Prices.**—As the production of silver is dependent to a very large extent on the price realized, a statement of the average price per standard ounce in the London market during the last five years is given below :—

SILVER.—PRICES, 1917 TO 1921.

Price.	1917.	1918.	1919.	1920.	1921.
Pence per standard oz. . . .	40 $\frac{7}{8}$	47 $\frac{1}{2}$	57 $\frac{1}{16}$	61 $\frac{9}{16}$	36 $\frac{7}{8}$

The high average in 1917 was succeeded by a further rise to 47 $\frac{1}{2}$ d. in 1918, the monthly averages ranging from 42 $\frac{13}{16}$ d. in February to 49 $\frac{1}{2}$ d. in September and October. Prices in 1919 showed a sensational rise. Beginning with an average of about 48 $\frac{3}{8}$ d. per ounce during each of the first four months of the year, prices rose rapidly until in September the high average of 61.7d. was reached, followed by 64d. in October, 70d. in November, and 76.4d. in December. In January, 1920, the price rose to 79.8d., and in February the record figure of 85d. per oz. was reached. Next month, however, there was a drop to a little over 74d., and from August, when the price was 59.87d., the quotations fell rapidly, the figure in December being 41.85d. The average for January, 1921, was about 40d., but by the end of June the price had fallen to less than 35d., followed by a rise to 41 $\frac{7}{16}$ d. in October, and again declining to 35 $\frac{1}{8}$ d. at the end of the year.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each of the last five years is given below :—

SILVER MINING.—PERSONS EMPLOYED, 1917 TO 1921.

Year.	N.S.W.	Q'land.	W. Aust.	Tasmania.	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.
1917	7,619	71	(a) 328	646	33	8,697
1918	7,585	98	(a) 382	631	10	8,706
1919	6,556	145	(a) 74	798	3	7,576
1920	1,931	143	(a) 238	517	2	2,831
1921	3,150	229	(a) 41	352	..	3,772

(a) Lead ore.

The bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant. The closing of the mines on the Broken Hill field during the greater part of the year was responsible for the falling-off in the total for 1920, while the resumption of normal activity in 1921 was delayed by the causes alluded to in 2 hereinbefore.

§ 5. Copper.

1. **Production.**—The production of copper in the various States has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The quantity and value of the local production as reported and credited to the mineral industry for the years 1917 to 1921 are shown in the following tables :—

COPPER.—PRODUCTION, 1917 TO 1921.

State.	1917.	1918.	1919.	1920.	1921.
QUANTITY.					
	Tons.	Tons.	Tons.	Tons.	Tons.
New South { Ingot and Matte	6,576	6,510	1,460	1,290	499
{ Ore .. ..	..	..	..	..	..
Victoria { Ore .. ..	..	..	..	..	..
Queensland { Ingot and Matte	19,062	18,980	9,997	15,897	2,428
{ Ore .. ..	..	..	..	..	..
South Aus- { Ingot and Matte	7,213	7,169	2,517	4,339	1,532
tralia { Ore .. ..	..	..	..	..	..
Western { Ingot and Matte	535	478	4	137	206
Australia { Ore	966	1,643	455	1,511	1,040
Tasmania { Ingot and Matte	5,845	5,559	5,071	4,792	6,181
{ Ore	771	444	..	..	..
Northern { Ingot and Matte	..	..	..	..	..
Territory { Ore	(a) 48	(a) 619	(a) 159	(a) 67	..

VALUE.

	£	£	£	£	£
New South Wales	814,154	696,580	139,296	127,978	41,267
Victoria .. ..	..	..	..	..	..
Queensland	2,208,232	2,087,751	952,501	1,551,995	168,556
South Australia	902,495	828,556	228,930	423,601	106,370
Western Australia	85,738	66,146	10,105	25,165	24,601
Tasmania	847,754	776,106	558,694	528,237	463,163
Northern Territory	(a) 5,517	(a) 9,648	(a) 2,349	(a) 780	..
Australia	4,863,890	4,464,787	1,891,875	2,657,756	803,957

(a) Year ended 30th June.

The heavy fall during 1921 was due to the low price of the metal preventing the profitable working of many of the copper mines throughout Australia.

2. *Sources of Production.*—(i) *New South Wales.* The production in this State in 1921 amounted to 499 tons valued at £41,267, as compared with 1,290 tons valued at £127,978 in the preceding year. The prevailing depression in this branch of the mining industry in 1921 was accentuated by the low prices ruling for copper and high costs of production and transport. The Cobar field produced only 55 tons, as against nearly 5,000 tons in 1917. Small yields were reported also from the Grenfell, Drake, Mount McDonald, Orange, Rockley, and the Yass divisions.

(ii) *Queensland.* The yield in this State amounted in 1921 to 2,428 tons valued at £168,556, and shows a serious decline as compared with the preceding year when nearly 16,000 tons valued at £1,552,000 were raised. The small return in 1921 was, of course, due to the low prices realized for copper. Yields from the chief producing areas were as follows—Mount Morgan, 1,289 tons, valued at £89,494; Etheridge, 814 tons, £56,515; Herberton, 98 tons, £6,805; Cloncurry, 89 tons, £6,178; and Chillagoe, 48 tons, £3,332. These yields naturally compare very unfavourably with those of the previous year. The Cloncurry district—reckoned the richest and most extensive cupriferous area in Australia—which under normal circumstances produces more than half the copper output of the State, returned a yield of only 89 tons, as against 7,640 tons in 1920.

(iii) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State. In recent years, however, Queensland, Tasmania, and New South Wales have come to the front as copper producers, as the table on the preceding page shows. Deposits of copper ore are found over a large portion of South Australia. A short account of the discovery, etc., of some of the principal mining areas, such as Kapunda, Burra Burra, Wallaroo, and Moonta, was given in earlier issues of the Official Year Book. During 1921 the output amounted to 1,532 tons, valued at £106,370, the bulk of the production being from the Wallaroo and Moonta Company which in normal times employs about 1,500 hands. Owing to low prices the value of the yield in 1921 was only about one-fourth that of the previous year.

(iv) *Western Australia.* The value of copper and ore exported from this State in 1921 was £24,601. According to the returns, the production in the West Pilbara field was 1,055 tons, valued at £18,955, while the Phillips River field showed a production of 95 tons, valued at £1,207. The Whim Well mine on the Pilbara field was the principal producer, but operations were greatly restricted by the low price ruling for the metal.

(v) *Tasmania.* The quantity of copper produced in Tasmania during 1921 was 6,181 tons, valued at £463,163, the bulk of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 140,894 tons of ore—of which 37 tons were purchased from other mines—and produced 6,220 tons of blister copper, containing copper, 6,170 tons; silver, 183,020 ozs.; and gold 4,646 ozs.; the whole being valued at £512,862. The employees in 1921 numbered 1,359, of whom 689 were miners, 544 were engaged in the reduction works, and 128 in the railway department. Current for power and lighting is obtained from the Lake Margaret hydro-electric plant. To the end of 1921 this Company had paid upwards of £3,830,000 in dividends.

(vi) *Northern Territory.* Copper has been found at various places, but lack of capital and difficulty of transport prevent the development of the deposits. A small quantity of ore was raised in 1920, but none was recorded in 1921.

3. *Prices.*—The great variation in price that the metal has undergone is shown in the following table, which gives the average price in London and New York during each of the last five years. The figures are given on the authority of the *The Mineral Industry*.

COPPER.—PRICES, 1917 TO 1921.

Year.				London Price per Ton Standard Copper.	New York Price in Cents per lb. Electrolytic Copper.
				£	Cents.
1917	..	..	..	124.89	27.18
1918	..	..	..	115.53	24.63
1919	..	..	..	90.80	18.69
1920	..	..	..	97.48	17.46
1921	..	..	..	69.36	12.50

As evidence of the tremendous monthly variation during the period covered by the table, it may be noted that in February, 1917, the average London price of standard copper was £137 17s. 11d. per ton, while in November, 1921, it was quoted at £66 12s. 3d.

4. **World's Production of Copper.**—The world's production of copper during the five years 1917 to 1921, is estimated to have been as follows :—

COPPER.—WORLD'S PRODUCTION, 1917 TO 1921.

Year	..	..	..	1917.	1918.	1919.	1920.	1921.
World's production—tons	..			1,404,500	1,372,800	977,300	930,200	524,900

The yields from the chief copper-producing countries in 1921 were as follows :—

COPPER.—PRODUCTION, CHIEF COUNTRIES, 1921.

Country.				Production.	Country.				Production.
				Tons.					Tons.
United States	..	..	..	225,700	Canada	..	..	..	20,200
Chile	..	..	..	54,800	Australia	..	..	..	18,600
Japan	..	..	..	52,500	Germany	..	..	..	16,200
Africa	..	..	..	38,600	Mexico	..	..	..	12,100
Peru	..	..	..	33,300	Bolivia	..	..	..	9,500
Spain and Portugal	..	..	..	31,900	Cuba	..	..	..	7,700

The Australian production in 1921 amounted to about 3.5 per cent. of the total.

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during each of the last five years was as follows :—

COPPER MINING.—PERSONS EMPLOYED, 1917 TO 1921.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.	No.	No.
1917 ..	2,074	..	3,154	2,000	154	1,671	92	9,145
1918 ..	1,529	..	3,209	2,000	158	1,597	60	8,553
1919 ..	1,148	..	2,521	400	72	1,571	12	5,724
1920 ..	583	2	1,815	1,285	116	1,577	2	5,380
1921 ..	109	..	675	1,000	36	1,361	6	3,187

§ 6. Tin.

1. **Production.**—The development of tin mining is, of course, largely dependent on the price realized for the metal, and, as in the case of copper, the production has been subjected to somewhat violent fluctuations. The tables below show the quantity and value of the production as reported to the Mines Departments in each of the States during the five years, 1917 to 1921 :—

TIN.—PRODUCTION, 1917 TO 1921.

State.		1917.	1918.	1919.	1920.	1921.
QUANTITY.						
		Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales	.. { Ingots	1,109	1,182	1,146	..	..
	{ Ore	963	738	1,546	2,486	1,595
Victoria	.. { Ingots	..	..	..	..	..
	{ Ore	139	135	113	84	80
Queensland	.... { Ingots	(b)	(b)	(b)	(b)	(b)
	{ Ore(a)	1,177	1,311	994	1,486	1,050
Western Australia	.. { Ingots	..	..	..	..	..
	{ Ore	383	415	318	243	67
Tasmania	.. { Ingots	2,637	2,256	1,580	1,310	790
	{ Ore	(c)	(c)	(c)	(c)	(c)
Northern Territory	.. Ore	(d)270	(d)246	(d)162	(d)180	(d) 83
VALUE.						
		£	£	£	£	£
New South Wales	.. ..	373,696	548,876	416,623	413,794	163,451
Victoria	.. ..	19,709	24,481	17,561	12,815	11,961
Queensland	.. ..	160,600	251,755	143,167	252,054	98,471
Western Australia	.. ..	45,288	76,952	47,269	49,449	6,485
Tasmania	.. ..	427,917	488,798	395,794	369,362	130,257
Northern Territory	.. ..	(d)27,120	(d)41,432	(d)30,021	(d)27,610	(d)7,793
Total	.. ..	1,054,330	1,432,294	1,050,435	1,125,084	418,418

(a) Dressed tin ore, about 70 % tin.

(b) Included with ore.

(c) Included with ingots.

(d) Year ending 30th June.

As the table shows, there was a serious decline in the production of tin in 1921, the values being the lowest recorded for the quinquennium. The falling-off was due to low prices and high production costs, and in some instances to exhaustion of ore supplies. In New South Wales there was a serious decline in the returns from dredging in the New England district, and a company at Emmaville dismantled its plant, which was the largest of its kind in Australia. The Vegetable Creek Tin Mining Co., for many years the largest producer of tin in the State, also closed down owing to failure to locate the continuation of the lead. In Queensland all the tin treatment plants were idle for varying periods during the year.

2. **Sources of Production.**—(i) *New South Wales.* A large proportion of the output in New South Wales was obtained by dredging, the quantity so won in 1921 being 768 tons, valued at £76,550. Forty-seven pump, and 3 bucket dredges, of a combined value of £228,652, were in operation during the year. In the Tingha division of the Peel and Uralla district the yield amounted to 570 tons, valued at £57,161. The Emmaville division in the New England district showed a yield of 539 tons, valued at £52,532. The Vegetable Creek mine in this area was, for many years, the chief producer of tin in the State, but the payable wash available was practically exhausted in 1921. In the Wilson's Downfall division, 58 tons, valued at £6,309 were raised. The Glen Innes division, also in the New England district, returned a yield of 42 tons, valued at £3,917, and the Torrington division 184 tons, valued at £21,242. The Ardlethan field, in the Lachlan division, produced ore and concentrates to the value of £12,242.

(ii) *Victoria*. The bulk of the production in 1921 was obtained by dredging and sluicing, the Cock's Pioneer Gold and Tin Co. in the Beechworth district contributing 73 tons, valued at £11,290.

(iii) *Queensland*. The chief producing districts in Queensland during 1921 were Herberton, 477 tons, valued at £43,006; Kangaroo Hills, 275 tons, £26,980; Stanthorpe, 125 tons, £12,249; Cooktown, 111 tons, £10,981; Chillagoe, 57 tons, £4,971. As pointed out previously, the low prices of the metal in 1921 had a depressing effect on the industry, the production for the year being valued at £98,000 as compared with £252,000 in 1920.

(iv) *Western Australia*. The export of tin ore for the State during 1921 amounted to 67 tons, valued at £6,485, as compared with 243 tons, valued at £49,449 in 1920. The production of black tin from the Greenbushes field amounted to 53 tons, valued at £5,778, and from the Pilbara field 14 tons, valued at £1,460. Deposits of tin occur in widely-separated localities in the Kimberley division, the Thomas River in the Gascoyne Valley, and at Poona and Coodardie on the Murchison goldfield.

(v) *Tasmania*. During 1921 the quantity of metallic tin won amounted to 790 tons, valued at £130,257, as compared with 1,310 tons, valued at £369,362, during the preceding year. The decrease is accounted for by depletion of supplies, low market values of tin, high production costs, and shortage of water, particularly in the North-Eastern division. The yield from this division, which in 1920 amounted to 604 tons, fell in 1921 to 392 tons. Of the total, 231 tons were contributed by the mines in the Pioneer and Gladstone districts, while 157 tons came from the Ringarooma, Derby, and Branhholm area. The yield in the Eastern division amounted to 142 tons, the St. Helen's Mines furnishing 82 tons. From the North-Western division the output was 205 tons, the bulk of it being raised by the Mt. Bischoff, with 193 tons. The production in the Western division was returned at 51 tons.

(vi) *Northern Territory*. The yield of tin ore in 1921 amounted to 83 tons, valued at £7,793, as against 180 tons, valued at £27,610 in 1920. The collapse was due to the low market price of tin, coupled with the high cost of stores, and increased treatment and transport charges. Stanniferous deposits are found at various places, including Maranboy, Hayes Creek, Mt. Wells, Crest of the Wave, Mary River, Horseshoe Creek, West Arm, Umbrawarra and Golden Gully, and Hidden Valley. Two batteries for the treatment of tin ore have been erected by the Government, one at Maranboy, costing £20,163, and one at Hayes Creek, at an expense of £3,294.

3. **World's Production.**—According to *The Mineral Industry* the world's production of tin during each of the last five years was as follows. The figures have been slightly amended since last issue.

TIN.—WORLD'S PRODUCTION, 1917 TO 1921.

1917.	1918.	1919.	1920.	1921.
Tons. 125,223	Tons. 122,213	Tons. 116,485	Tons. 118,695	Tons. 107,948

The yields from the chief producing countries in 1921 were as follows :—

TIN.—PRODUCTION, CHIEF COUNTRIES, 1921.

Country.			Production.	Country.			Production.
			Tons.				Tons.
Malaya ..	..	..	36,300	Australia ..	..	..	3,000
Bolivia ..	..	..	19,400	India ..	..	..	1,900
Banka ..	..	..	14,900	South Africa ..	..	..	800
Billiton ..	..	..	12,000	Cornwall ..	..	..	700
Siam ..	..	..	6,200	Other Countries ..	..	..	1,600
China ..	..	..	6,100				
Nigeria ..	..	..	5,000	Total ..	..	..	107,900

Based on the results for the last three years, Australia's share of the world's tin production would appear to be about $3\frac{1}{4}$ per cent.

4. **Prices.**—The average price of the metal in the London market for the years 1917 to 1921 was as follows :—

TIN.—PRICES, 1917 TO 1921.

Year.			Price per Ton.			Year.			Price per Ton.		
			£	s.	d.				£	s.	d.
1917	..	..	237	13	1	1920	..	..	296	1	7
1918	..	..	329	11	2	1921	..	..	165	5	4
1919	..	..	257	9	8						

The year 1921 was a disastrous one for the tin miner, as the price of the metal dropped by over £130 per ton as compared with that in the preceding year. Moreover, the fall had been more or less continuous since the early months of 1920, thus forcing the poorer mines to close down. In Malaya, the alluvial miners tried to carry on by working for low wages, and, in some cases, for no return, but the depression proved longer than was expected, and it is stated by *The Mineral Industry* that the necessity for picking the eyes of mines has in some measure depleted the world's reserves of stanniferous ground. The depressing influence of the stocks held in the East also adversely affected the market. Coupled with this was the low level of consumption, the Continental demand being poor, while the industry in Great Britain was hampered by the coal strike, and imports into the United States were far below the average.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during the last five years is shown below :—

TIN MINING.—PERSONS EMPLOYED, 1917 TO 1921.

Year.			N.S.W.	Victoria.	Q'land.	W. Aust.	Tas.	Nor. Ter.	Australia.
			No.	No.	No.	No.	No.	No.	No.
1917	..	..	1,779	42	878	211	1,311	151	4,372
1918	..	..	2,352	52	1,110	292	1,260	190	5,256
1919	..	..	2,171	38	1,114	209	1,303	190	5,025
1920	..	..	1,822	48	920	187	1,318	120	4,415
1921	..	..	1,321	31	864	59	699	100	3,074

§ 7. Zinc.

1. **Production.**—(i) *New South Wales.* (a) *Values Assigned.* The production of zinciferous concentrates is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores. During the earlier years of mining activity on this field a considerable amount of zinc was left unrecovered in tailings, but from 1909 onwards improved methods of treatment resulted in the profitable extraction of the zinc contents of the accumulations at the various mines.

As the metallic contents of the bulk of the concentrates, etc., raised in the Broken Hill District are extracted outside New South Wales, the mineral industry of that State is not credited by the Mines Department with the value of the finished product. The figures given hereunder, therefore, refer to the quantity and value of the zinc concentrates actually exported during the years specified.

ZINC.—CONCENTRATES, ETC., EXPORTED FROM NEW SOUTH WALES, 1889 TO 1921.

Year.			Year.		
Quantity of Zinc Concentrates, etc., Exported.			Quantity of Zinc Concentrates, etc., Exported.		
Value.			Value.		
Tons.			Tons.		
1889	97	988	1918	87,019	295,413
1891	219	2,622	1919	72,294	247,395
1899	49,879	49,207	1920	71,043	249,456
1917	113,531	441,486	1921	79,694	283,455

(b) *Local and Foreign Extraction.* A statement of the quantity of zinc extracted in Australia and the estimated zinc contents of concentrates exported overseas during the five years 1918 to 1922, will be found in § 18 hereinafter.

(ii) *Queensland.* At the Silver Spur mine at Texas, in the Stanthorpe division of Queensland, part of the ore is high in zinc and lead, but low in silver. Profitable extraction of the zinc and lead depends, however, on railway connexion with the mine. Zinc sulphide is produced by the Mount Garnet Mine in the Herberton district, and during 1916 several hundred tons of good quality ore were raised, but until a suitable treatment plant has been erected, it is stated that production cannot be economically undertaken.

During the year 1916, a small quantity of zinc, valued at £630, was produced in Western Australia, but there was no production recorded for subsequent years.

The Tasmanian mineral returns for 1920 included an item of 9 tons of zinc ore, valued at £334, raised at the Swansea Mine, near Zeehan, but none was recorded in 1921.

Investigations in regard to the Read-Roseberry zinc-lead deposits in Tasmania have proved the existence of 1,680,000 tons of ore, which, added to an estimated quantity of 915,000 tons of "probable" ore, make a total supply of 2,595,000 tons. It is stated that the metallurgical treatment of the ore can be successfully carried out, and that the deposits are amongst the richest and most important in the world.

The Electrolytic Zinc Co. at Risdon continued the treatment of calcines from Broken Hill, and during 1921 produced 1,118 tons of slab zinc, valued at £30,242. About 850 men were employed at these works.

2. *Prices.*—During the four years 1911 to 1914, the London price of zinc averaged £23 15s. per ton, ranging from £21 in 1914 to £26 3s. 4d. in 1912. Owing to the heavy demand and other circumstances arising out of the war, the prices in 1915 and 1916 reached the very high average of £67 11s. 1d. and £72 1s. 5d. per ton respectively. For 1917 the average recorded was £52 8s. 3d., for 1918, £54 3s. 7d., for 1919, £42 17s. 7d., for 1920, £44 7s. 5d., and for 1921, £25 16s. 11d. per ton.

§ 8. Iron.

1. *General.*—The fact that iron-ore is widely distributed in Australia has long been known, and extensive deposits have been discovered from time to time at various places throughout the States. It will appear, however, from what is stated below, that the utilization of these deposits for the production of iron and steel is, at present, confined to New South Wales.

2. *Production.*—(i) *New South Wales.* (a) *Lithgow Iron Works.* Reference to the extent of the deposits of iron-ore in the State, and the events leading up to the establishment of ironworks at Lithgow, will be found in earlier issues of the Year Book (see No. 3, p. 508). During 1921 the following materials were received at the blast furnace at the Eskbank Iron Works, Lithgow: Iron ore, 168,385 tons; limestone, 68,881 tons; slag, 3,455 tons, and coke, 130,561 tons. The iron-ore was raised from quarries at Tallawang, Cadia, Coombing Park, and Breadalbane, and the pig iron produced therefrom amounted to 90,053 tons.

The following table shows the quantity and value of pig iron, produced in New South Wales, during the last five years from locally-raised ores only :—

PIG IRON.—PRODUCTION FROM LOCAL ORES, NEW SOUTH WALES, 1917 TO 1921.

Particulars.			1917.	1918.	1919.	1920.	1921.
Quantity ..	Tons		45,025	68,072	80,941	86,096	90,053
Value ..		£	247,637	350,000	445,175	645,720	639,376

The figures quoted above refer to production from *local* ores only, and as such credited to the New South Wales mineral industry. They do not, of course, represent the total production of pig iron in New South Wales, since, as shown in the succeeding paragraph, a considerable quantity of ore raised in South Australia and credited therefore to the mineral returns of that State is treated in New South Wales.

(b) *Newcastle Iron Works.* The Broken Hill Proprietary Company established works for the manufacture of iron and steel on a large scale at Newcastle, and operations were started early in 1915. The Company is utilizing the immense deposit of iron ore at the Iron Knob quarries in South Australia, which are connected with the seaboard at Whyalla, a distance of about 36 miles, by the Company's tramway. The ore quarried for the year ending December, 1921, amounted to 463,578 tons. Extensive limestone works and loading bin at Devonport, Tasmania, as well as quarries in New South Wales for dolomite, magnesite, etc., are also owned by the Company.

The output of pig iron for the year 1921 amounted to 262,312 tons, and of steel ingots to 255,437 tons. Further details in regard to the activities of these works in 1921 were given on page 347 of Official Year Book No. 15. During the succeeding twelve months, owing to various industrial and economic difficulties, production was limited, and any figures in relation thereto would not convey even an approximate idea of the capacity of the works. It may be stated, however, that the steel works possess three blast furnaces of a normal daily producing capacity of 1,300 tons, and a fourth furnace of 100 tons for the production of foundry iron. There are seven 65-ton basic open hearth furnaces capable of producing 8 to 10,000 tons of ingot steel weekly. The works are supplied with a 35-inch blooming mill for the production of blooms, plates, etc., a 28-inch rolling mill for the manufacture of heavy rails, structural steel, billets, etc., an 18-inch mill for making light rails, structural shapes, fishplates, and heavy sections of merchant bar and billets, a 12-inch mill and an 8-inch mill, each for merchant bars, etc., a continuous rod mill for the production of wire rods, and a fishplate mill. A steel foundry, containing one acid open hearth furnace, and a cupola furnace for iron castings, with a direct metal foundry which takes the hot metal from the blast furnaces, supply all necessary castings.

The Company also possesses 224 by-product coke ovens, and connected with this department are the tar, sulphate of ammonia, and benzol plants.

(c) *Iron Oxide, etc.* A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, and it is also to some extent employed as a pigment, the output in New South Wales being drawn chiefly from the deposits in the Port Macquarie, Moss Vale and Yass Divisions. During 1921 the iron oxide raised amounted to 3,109 tons, valued at £2,917. The smelting companies utilize a certain amount of ironstone for fluxing purposes, the quantity so used in 1921 amounting to 7,473 tons, valued at £9,132.

(ii) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa in the Gippsland district, and at Dookie. A blast furnace was erected in 1881 near Lal Lal, on the Moorabool River, and some very fair quality iron was produced, which was used for truck wheels and stamper shoes at the Ballarat mines. The fall in the price of the metal, however, led to the closing of the works. In his report for 1905 the Secretary for Mines stated that without special assistance to the industry there does not seem to be any prospect of the deposits being profitably worked.

(iii) *Queensland.* Queensland possesses some extensive deposits of iron ore, which are mined chiefly for fluxing purposes in connexion with the reduction of gold and copper ores. During the year 1921, 4,061 tons of ironstone flux, valued at £5,976, were raised, the bulk of which came from Iron Island in the Rockhampton district. It is stated that Queensland possesses within its own borders an abundance of the ore, fuel, and fluxes required for the carrying on of a large ironworks. The important lodes on the Wild River are a promising source of supply for the proposed State iron and steel works.

(iv) *South Australia.* South Australia possesses some rich deposits of iron ore capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron ore of high percentage, situated about 40 miles W.S.W. from Port Augusta. The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons. The Broken Hill company utilizes ore from this quarry at its ironworks at Newcastle, New South Wales, and the amount raised for the year 1921 was 506,993 tons, valued at £587,267.

(v) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position, the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The ores are found over a stretch of country from Kimberley to Cape Leeuwin.

Amongst the most important of the high-grade deposits are those at Yampi Sound in the Kimberley division, which are estimated to contain 97 million tons of very rich ore; Wilgie Mia, where the ore in sight is estimated at 27 million tons; Gabanintha, near Nannine, with over a million tons above surface level; Mount Gibson, in the south-west corner of the Yalgoo gold-field, where there are about 10 million tons of ore adapted for steel manufacture by the acid process; and Koolyanobbing, near Southern Cross, where there is a very large deposit of high-grade micaceous hematite. The production of pyritic ore reported in 1921 amounted to 6,117 tons, valued at £7,871.

(vi) *Tasmania*. The amount of ore available in the principal iron-ore deposits in Tasmania has been estimated as follows —

	Tons.
Blythe River Lode	17,000,000
Dial Range and Penguin	700,000
Beaconsfield and Anderson's Creek	1,300,000
Long Plain	20,000,000
Zeehan District	2,900,000
Nelson River	Unknown
Total	41,900,000

The total production of iron ore in 1908 was 3,600 tons, valued at £1,600, all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909 there has been no further production. Iron pyrites for the manufacture of sulphuric acid and of manures is produced on the West Coast, the quantity raised in 1921 being 606 tons, valued at £2,579.

(vii) *Northern Territory*. Large bodies of rich ironstone have been discovered in various parts of the Territory, particularly between the Adelaide River and Rum Jungle. Owing to the lack of local coal, however, the deposits possess no immediate value.

3. Iron and Steel Bounties.—The local production of iron and steel has been encouraged by various legislative enactments (see Official Year Book No. 15, p 348). Under "The Iron and Steel Products Bounty Act 1922," bounties are payable on fencing wire, galvanized sheets, wire-netting, and traction engines made in Australia. It is essential that these articles be made from materials produced and manufactured in Australia, unless imported material is authorized after enquiry and report by the Tariff Board. The total payments in any one financial year must not exceed £250,000. Rates of bounty are—for fencing wire and galvanized sheets, £2 12s. per ton; for wire-netting, £3 8s. per ton; and for traction engines from £40 to £90 each, according to brake horse-power.

4. World's Production of Iron and Steel.—The Australian production of iron and steel at present forms a very small proportion of the world output. According to *The Iron Trade Review* the world's production of pig iron in the year 1913 was estimated at roughly 77 million tons; in 1920 at 61 million, and in 1921 at 36 million tons. During each of the three years specified the respective shares of the principal producing countries were as follows:—United States, 31, 36, and 17 millions; Germany, 19, 6½, and 7½ millions; and Great Britain, 10, 8, and 3 millions. The world's steel production for the same three years was estimated at 75, 68, and 41 million tons. To these totals the United States contributed 31, 42, and 20 millions; Germany, 19, 8, and 9 millions; and Great Britain, 8, 9, and 4 million tons.

§ 9. Other Metallic Minerals.

1. Antimony.—The production of antimony ore in New South Wales amounted in 1921 to 125 tons, valued at £900, the output being obtained in the Hillgrove and Kempsey divisions. During the year prospecting was carried on in the Glen Innes and Drake divisions. The total quantity of antimony (metal and ore) raised in New South Wales up to the end of 1921 was 19,032 tons, valued at £344,588. The production of antimony concentrates in Victoria during 1921 amounted to 347 tons, valued at £5,890. The whole of the production came from ore raised by a company operating at Costerfield. In

Queensland extensive deposits are found at Neerdie in the Wide Bay district, at Wolfram Camp, on the Hodgkinson field, on the Palmer River in the Ravenswood district, and at various places in the Herberton district. Ore has also been obtained in the Dividing Range near Herberton, and adjacent to some of the central tributaries of Emu Creek. A promising lode was recently discovered near Cooktown. Owing to the low price of the metal in 1919 production was practically negligible; while none was recorded in 1920 and 1921. In Western Australia lodes of stibnite carrying gold have been found in the Roeburne district. During 1917, 12 tons of antimony, valued at £258, were exported, but there was no subsequent production until 1920, when 3 tons, valued at £45, were exported. There was no record of production in 1921.

2. Arsenic.—In New South Wales the production of arsenic in 1921 amounted to 397 tons valued at £17,865, of which 196 tons were raised at the Ottery Mine in the Emma-ville division, 138 tons at Urunga in the Kempsey division, while smaller quantities were produced in the Port Macquarie and Tumut divisions. During 1917 the high price ruling for arsenic, and the urgency for the need of supplies in connexion with the destruction of prickly pear, led to the reservation by the Queensland Mines Department of an extensive area of arsenic-bearing deposits at Jibbenbar, in the Stanthorpe district. Production in 1921 amounted to 220 tons, valued at £12,325. There has been a strong demand for the product not only for the destruction of prickly pear, but for the manufacture of arsenical dip solutions and other purposes. In South Australia attention is being devoted to arsenic-bearing minerals at Woodside, at Westward Ho, near Mannahill, and on Kangaroo Island. During 1920 Western Australia exported 1,765 tons of arsenical ore, valued at £4,260, but in 1921 the export fell to 7 tons, valued at £16.

3. Bismuth.—This metal is found principally in association with molybdenite in New South Wales, but owing to lack of market for these minerals the production of bismuth in 1921 was only 8 tons, valued at £912, of which $6\frac{1}{2}$ tons valued at £660 were obtained in the Torrington division. The total production to the end of 1921 was 768 tons, valued at £223,840. In Queensland wolfram and bismuth have been found in various districts, but owing to the low prices obtainable the chief centres of production—Mount Carbine, Wolfram, Bamford, etc.—were practically idle in 1921. In South Australia deposits are found at Balhannah, at Mount Macdonald, and at Murninnie on the shores of Spencer's Gulf. A small quantity of bismuth was exported from Western Australia in 1919, but none was recorded subsequently. In Tasmania a small quantity, valued at £21, was raised in 1921 by the S. & M. mine at Middlesex.

4. Chromium.—The output of chromite in New South Wales during 1921 was estimated at 62 tons, valued at £124, of which 52 tons were raised at Upper Bingara, and 10 tons in the Gulgong mining area. Chrome iron ore is found in Queensland in the Rockhampton district, and about 160 tons were raised in 1920 by the Mount Morgan Company at Glen Geddes, but there was no production in 1921.

5. Cobalt.—This metal was found at Carcoar in New South Wales in 1889, and subsequently at Bungonia, Port Macquarie, and various other places. There was no export of cobalt since 1911, and the total produced since 1860 amounted in value to only a little over £10,000. In Queensland a rich deposit was opened up in 1920 in the Cloncurry area, and the production in 1921 amounted to 85 tons, valued at £21,332. Although the metal is a valuable one, greater development was hindered by the uncertainty of the demand.

6. Lead.—Lead mining *per se* is not practised to any extent in Australia, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales the Mines Department took credit in 1921 for 20,353 tons, valued at £462,862, and the production to the end of 1921 was taken as 318,000 tons, valued at £6,248,000. As stated previously, the metallic contents of the major portion of the silver lead ores are extracted outside New South Wales, and these figures refer only to lead values assigned as the produce of the State. In Victoria, oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient

extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver, copper or gold contents of the ore, the lead produced in 1921 amounting to 1,057 tons, valued at £24,077. Of this total the Chillagoe area produced 881 tons, valued at £20,070, and the Brisbane area 85 tons, valued at £1,929. During 1921 pig lead exports from Western Australia amounted to 2,156 tons, valued at £48,863. Tasmanian lead production in 1921 was returned as 1,435 tons, valued at £32,241, of which the Zeehan mines contributed 698 tons, the North Mt. Farrell mines, 377 tons, Magnet 195 tons, and Round Hill mines, 165 tons.

7. Manganese.—During 1921 the output of manganese ore in New South Wales amounted to 3,515 tons, valued at £10,545, the bulk of the production being raised in the Grenfell division. A small quantity was also raised in the Gulgong division, and a promising discovery was made during the year in the Deepwater division. In Victoria the production amounted to 10 tons, valued at £100, raised in the Heathcote division. In Queensland there are extensive deposits of low-grade manganese ores in various places. High grade ore is not available in quantity, but the extensive deposits of medium grade at Kandanga should in future become a valuable asset in the steel industry. Production in 1921 amounted to 833 tons, valued at £4,710. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago. Deposits are being actively worked at the present time at Pernatty, Hawker, and Gordon. The production in 1921 was valued at £9,774. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district. Extensive deposits exist in a locality 18 miles north-west from Peak Hill. In the northern part of the Cue district the deposits cannot at present be profitably worked owing to absence of cheap transport facilities. The export of manganese in 1921 consisted of 16 tons, valued at £145.

8. Molybdenum.—Owing to the lack of demand for the mineral there was no production of molybdenite in New South Wales during the year 1921, but developmental and prospecting work was carried out in the Dalmorton, Glen Innes, and Tenterfield divisions. The total production of molybdenite since its discovery is stated at 840 tons, valued at £214,000. In Victoria 5 tons of molybdenite, valued at £70, were raised in 1921 at Everton. The production in Queensland for 1921 was 9 tons, valued at £2,187, raised on the Chillagoe field. The Wombah mine near Mount Perry is regarded by geologists as one of the most promising sources of molybdenite in Australia. A small quantity was produced in 1914 from the mines in the Moonta district in South Australia, and the occurrence of the metal is reported from various other localities. At the Yelta mine bunches of the ore are scattered through the copper ore. Molybdenite occurs in small quantities at various localities in Western Australia, but there was no production recorded in 1921. In the Northern Territory, molybdenite is found at Yenberrie, where it is stated that the ore increases in richness as the workings become deeper.

9. Radium.—Reference to the occurrence of radio-active minerals in Australia and also to the manufacture of radium bromide in Sydney in 1914 has been made in previous issues of the Official Year Book, (see No. 15, p. 353), but in view of the absence of later developments the information is not repeated in the present issue.

10. Tungsten.—Wolfram and scheelite, the principal ores of tungsten, are both mined to some extent in New South Wales, but the low prices obtainable caused a cessation of mining activity in this direction in 1921. In Victoria the production of wolfram was returned in 1920 as 7½ tons, valued at £355, yields being obtained at Mount Murphy and the Tambo River, but there was no production in 1921. In Queensland, tungsten ores are found in several districts, but owing to low prices production in 1921 was practically negligible. (See also "Bismuth.") A deposit of wolfram was discovered near Yankalilla, in South Australia, as far back as 1893, but the production up to date has been small. It is believed that careful examination will lead to increased production from the deposits at Callawonga Creek. There was no production of tungsten minerals in 1921 in Western Australia. Tungsten ores are commonly met with in the gold reefs, and both wolfram and scheelite have been recorded as occurring in several widely-separated localities. In the Northern Territory wolfram is found at Hatches Creek, Wauchope Creek, Wolfram Creek,

Hidden Valley and Yenberrie. Numerous samples of high grade ore have been obtained at the Frew River in Central Australia. Owing to the low price there was no production in 1921. Wolfram is mined at various points in Tasmania, the production for 1921 being 10 tons, valued at £676, obtained chiefly at the Avoca mines. Scheelite has been discovered on King Island in Bass Strait, but there was no production in 1921.

11. **Other Metals.**—In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

§ 10. Coal.

1. **Production in each State.**—A historical account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. 3, pp. 515–6.) The quantity and value of the production in each State, and in Australia, during the five years, 1917 to 1921, are given in the table hereunder:—

COAL.—PRODUCTION, 1917 TO 1921.

Year.	N.S.W.	(a)Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1917 ..	8,292,867	466,220	1,048,473	..	326,550	63,412	10,197,522
1918 ..	9,063,176	439,575	983,193	..	337,039	60,163	10,883,146
1919 ..	8,631,554	423,945	931,631	..	401,713	66,253	10,455,096
1920 ..	10,715,999	442,241	1,109,913	..	462,021	75,429	12,805,603
1921 ..	10,793,387	514,859	954,763	..	468,817	66,476	12,798,302
VALUE.							
	£	£	£	£	£	£	£
1917 ..	4,422,740	335,259	597,360	..	191,822	38,673	5,585,854
1918 ..	4,941,807	349,696	572,305	..	204,319	37,676	6,105,803
1919 ..	5,422,846	372,075	614,307	..	270,355	47,004	6,726,587
1920 ..	7,723,355	464,739	841,551	..	350,346	64,005	9,443,996
1921 ..	9,078,388	603,323	831,483	..	407,117	63,446	10,983,757

(a) Exclusive of brown coal.

The figures for Victoria quoted above are exclusive of brown coal, the quantity and value of which during the last five years were as follows:—

BROWN COAL.—PRODUCTION, VICTORIA, 1917 TO 1921.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1917	39,144	10,571	1920	162,682	64,180
1918	66,200	17,944	1921	79,224	31,074
1919	111,628	34,542			

2. **Distribution and Quantity of Coal in each State.**—(i) *New South Wales.* The collieries in the Northern, Southern, and Western coal-fields are contained in an area of less than 1,000 square miles, and the amount of coal available therein is estimated at 20,000,000,000 tons.

In addition to this quantity of high-grade coal, it is believed that 40,000,000,000 tons of good coal may be won in the remaining 15,000 square miles comprising the Coal Measures area.

Further, the quantity of inferior coal which may be brought to the commercial stage by washing and other means is set down provisionally at 60,000,000,000 tons.

The combined total of these estimates reaches 120,000,000,000 tons, of which the actual reserves of good coal may be stated at 20,000,000,000 tons.

According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows:—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene ..	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite
II. Mesozoic—Triassic or Trias-Jura	2,500 „	Clarence and Richmond Rivers	Coal suitable for local use only
III. Palæozoic—Permo-Carboniferous	13,000 „	Northern, Southern, and Western Coalfields	Good coal, suitable for gas, household and steaming
IV. Palæozoic—Carboniferous ..	10,000 „	Stroud, Bullah Dellah	Very inferior coal, with bands; of no value

In regard to the Tertiary deposits, it may be noted that no serious attempt has been made to use the coal as fuel in New South Wales. At Kiandra a deposit of lignite was found to possess a maximum thickness of 30 feet, but as a general rule the seams vary from 3 to 4 feet in thickness. The Triassic or Trias-Jura deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. These beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. The Clarence basin extends into Queensland, and at Ipswich thick and valuable seams of coal are worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 16,550 square miles. The deepest part of the basin is somewhere in the vicinity of Sydney, where the “Sydney Harbour Colliery” worked the top seam at a depth of 2,884 feet. It is stated that the coal is specially suitable for coke manufacture. The mine, which is the deepest coal mine in Australia, has been idle for some years, but a new company has been formed to re-open it. Towards the north, south and west the seams rise towards the surface, and outcrop in the neighbourhood of Newcastle, Bulli and Lithgow. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of 15 miles, is now the most important coal mining district in Australasia. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, portion of which realized good prices as fuel.

The table hereunder gives the yields in each of the three districts during the five years 1917 to 1921:—

COAL.—PRODUCTION IN DISTRICTS, NEW SOUTH WALES, 1917 TO 1921.

District.	1917.	1918.	1919.	1920.	1921.
	Tons.	Tons.	Tons.	Tons.	Tons.
Northern	5,380,957	5,966,926	5,629,253	7,320,510	7,493,002
Southern	1,841,869	1,984,578	1,826,574	1,902,889	2,062,958
Western	1,070,041	1,111,672	1,175,727	1,492,600	1,237,427
Total	8,292,867	9,063,176	8,631,554	10,715,999	10,793,387

The output in 1921 was the highest yet recorded, the nearest approach to it being that for 1913, when 10,414,000 tons were raised. During the year deposits of lignitic coal at Coorabin, near Oaklands, were prospected with a view to exploitation on a commercial basis.

(ii) *Victoria.* (a) *Black Coal.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district.

The output of black coal from the chief Victorian collieries during the last five years was as follows :—

BLACK COAL.—PRODUCTION, VICTORIA, 1917 TO 1921.

Year.	State Coal Mine.	Outtrim Coal Syndicate.	Jumbunna Coal Company.	Coal Creek.	Austral Coal.	Powlett North Woolamai.	Sunbeam Collieries.	Total Production.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1917 ..	405,498	..	22,236	1,958	13,888	20,149	2,491	466,220	335,259
1918 ..	389,794	..	16,533	2,378	15,419	11,975	3,476	439,575	349,696
1919 ..	361,871	..	21,716	1,465	11,824	22,335	4,734	423,945	372,075
1920 ..	376,285	..	19,644	753	12,260	23,310	9,989	442,241	464,739
1921 ..	451,255	3,021	13,284	595	10,018	20,255	16,431	514,859	603,323

(b) *Brown Coal.* Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Cellibrand, and Barwon and Moorabool basins. In the Latrobe Valley, the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Its steaming value is equal to about half that of the Wonthaggi coal. Some large factories already have adopted brown coal for firing boilers, and there is also a fair demand for the product by householders. In 1917 an Advisory Committee appointed to report on the brown coal deposits of Victoria recommended the establishment of an open-cut mine at Morwell in connexion with a comprehensive scheme of electrical power generation and transmission, as well as for the supply of brown coal for other requirements. The recommendations of this Committee were incorporated in the "Electricity Commissioners Act" of 1918. The Commission is actively engaged in the work of opening up the Morwell deposits, and the product will be utilized for the generation of electricity, which will be transferred to Melbourne and to other towns in Victoria within economic distance. A briquetting plant estimated to cost £400,000 is in course of construction. The capacity of this plant will be about 350 tons per day. It is proposed to establish a township at Yallourn with provision for an ultimate population of 3,000. On the 30th June, 1922, there were 1,364 employees engaged on the various works of the Commission as follows—At Yallourn, 943; Transmission Lines, 126, Metropolitan Works, 295. Based on the results from boring, it has been estimated, that 10,978 millions of tons are available in the various beds.

The brown coal produced in Victoria is raised chiefly at the State Mine at Morwell, where the output in 1920 amounted to 162,682 tons, and in 1921 to 74,453 tons. During the latter year 4,766 tons were also raised by the Victorian Central Coal and Iron Co. at Lal Lal. Particulars regarding production for the last five years are given on page 815.

(iii) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the south-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only 60 feet deep, and borings have proved the deposit to be of considerable magnitude. The beds in the Cook district are estimated to comprise rather more than 1,000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and

the Flinders River. Boring operations have proved the existence of seams of workable coal for some distance on both sides of the Dawson River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds. The seam of coal at Blair Athol has been proved in places to have a thickness of at least 93 feet, and it is stated to be probably the thickest seam of black coal in the world.

The distribution of production during the last three years was as follows :—

COAL PRODUCTION.—QUEENSLAND, 1919 TO 1921.

Districts.					1919.	1920.	1921.
					Tons.	Tons.	Tons.
Ipswich	..	..	..	..	620,608	763,590	666,236
Darling Downs	..	..	..	..	97,454	102,074	94,044
Wide Bay and Maryborough	..	..	..	..	63,665	61,170	69,633
Rockhampton (central)	..	..	..	..	8,350	10,522	30,719
Clermont	..	..	..	..	121,250	145,001	75,549
Bowen (State Coal Mine)	..	..	..	..	306	3,914	2,138
Mount Mulligan (Chillagoe)	..	..	..	..	19,998	23,642	16,444
Total					931,631	1,109,913	954,763

The industry was subject to periods of slackness in 1921, particularly in the latter part of the year, and this is reflected in the smaller output from the principal districts, Ipswich and Clermont. During the year 1921-22 overseas exports amounted to 5,235 tons, valued at £6,011, of which 4,146 tons were forwarded to New Zealand and 1,089 tons to Hong Kong.

Operations were commenced at the State Coal Mine on the Bowen field in March, 1919. The coal is of good quality and is well suited for coking. With the completion of the railway to the field, it is anticipated that supplies of coke will be forwarded to the smelters at Chillagoe, Irvinebank and Cloncurry, the coke for which has hitherto been obtained chiefly from New South Wales. Coal of excellent quality has been raised from the prospecting shafts of the State Coal Mine at the Styx River, in the Rockhampton division. There is also a State Coal Mine at Baralaba, in the Mount Morgan area.

(iv) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to those of the Victorian brown coal, and until some means are devised of overcoming them, production will probably languish. The deposit is situated about 370 miles by rail from Adelaide, and 160 from Port Augusta, the total extent of coal-bearing country being set down as 42 square miles. The main seam has a thickness of over 45 feet. As the result of experiments made it would appear probable that profitable use might be made of the coal in a pulverized form. Investigation is at present being made on the site of a deposit of brown coal in Hope Valley, and borings have been made to test deposits at Moorlands and Clinton.

(v) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Permo-Carboniferous beds. The coal produced is bright and clean, but very fragile when free from moisture. Boring operations undertaken by the Government have proved the existence of coal measures at Wilga and Irwin River. The production from the five collieries situated at Collie amounted in 1921 to 468,817 tons, as compared with 462,021 tons in 1920, and 401,713 tons in 1919.

(vi) *Tasmania.* In Tasmania, coal occurs in the following geological periods :—
 (1) Permo-Carboniferous : Lower Coal Measures. (2) Mesozoic : Upper Coal Measures.
 (3) Tertiary : Brown Coal and Lignite deposits. Permo-Carboniferous coal is found at Avoca, Mt. Nicholas and Fingal, Thomson's Marshes, Langloh, Seymour, York Plains,

Mike Howe's Marsh, Longford, Colebrook, Schouten Island, Spring Bay and Prosser's Plains, Compton and Old Beach, Lawrenny, Longhole, Sandfly, Ida Bay, Hastings and Southport, Recherché and South Coast, Tasman's Peninsula. Deposits of lignite and brown coal are plentiful in beds of Tertiary age, but they have not been exploited to any extent. An estimate gives the approximate quantity of coal available as sixty-five million tons, of which eleven millions are in the Lower Coal Measures and fifty-four millions in the Upper Measures, exclusive of an unknown quantity in strata fringing the Central Tiers. Of the total output in 1921, amounting to 66,476 tons, the Cornwall and Mt. Nicholas Collieries in the North-eastern Division raised 36,562 and 24,926 tons respectively. The quantity and value of the coal raised in each division during the year were as follows:—North Western, 895 tons, £1,360; North Eastern, 63,750 tons, £60,091; Midland, 662 tons, £826; and South Eastern, 1,169 tons, £1,169.

3. Production in Various Countries.—The total known coal production of the world in 1921 amounted to about 1,280 million tons, towards which Australia contributed nearly 13 million tons, or over 1 per cent. The following table shows the production of the British Empire and the chief foreign countries in units of 1,000 tons during each of the five years from 1917 to 1921 where the returns are available. The figures for the British Empire and the United States are extracted from the official publications of the various countries, while those for other countries are taken from the Official Monthly Bulletin of Statistics published by the League of Nations. The production of lignite is included in those countries in which it is raised:—

COAL PRODUCTION.—BRITISH EMPIRE, 1917 TO 1921.

Year.	United Kingdom.	British India.	Canada.	Australia.	New Zealand.	Union of S. Africa.
	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.
1917	248,500	18,200	12,500	10,200	2,100	9,300
1918	227,700	20,700	13,400	10,900	2,000	8,800
1919	229,800	22,600	12,200	10,500	1,800	9,200
1920	229,500	18,000	14,800	13,000	1,800	10,200
1921	163,000	..	..	13,000	1,800	10,200

COAL PRODUCTION.—FOREIGN COUNTRIES, 1917 TO 1921.

Year.	Germany.	Belgium.	France.	Czecho-Slovakia.	Poland.	Netherlands.	Japan.	United States.
	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.	1,000 tons.
1917 ..	259,100	14,700	28,500	..	..	3,000	25,900	581,800
1918 ..	257,100	13,700	25,800	..	..	4,800	27,600	605,600
1919 ..	207,100	18,200	21,500	27,000	..	5,200	30,800	486,000
1920 ..	239,200	22,000	34,100	30,300	6,300	5,200	28,800	578,600
1921 ..	255,000	21,400	37,900	32,200	7,500	4,000	23,000	449,900

The United States returns include a large proportion of anthracite, the quantity averaging for the last five years about 83 million tons.

4. Exports.—The exports of coal from Australia are chiefly confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported to other countries in 1921 was 1,592,523 tons, valued at £1,740,584, of which amount 1,544,000 tons were exported from New South Wales, and 48,000 tons from Queensland.

In the following table will be found the quantity and value of the exports from New South Wales, during the last five years. The figures are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States.

COAL.—EXPORTS, NEW SOUTH WALES, 1917 TO 1921.

Year	1917.	1918.	1919.	1920.	1921.
Quantity, 1,000 tons	3,264	3,422	3,504	4,987	5,525
Value, £1,000	2,384	2,525	2,919	4,591	5,794

Arranged in order of importance the principal oversea countries to which coal was exported from New South Wales during the year 1921-22 are as shown hereunder. The quantity and value refer strictly to exports, and exclude bunker coal:—

COAL.—DESTINATION OF OVERSEA EXPORTS, NEW SOUTH WALES, 1921-22.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
New Zealand ..	423,117	440,868	Fiji	37,598	38,780
Netherlands East Indies	205,297	219,919	New Caledonia ..	22,335	25,166
United States ..	82,040	89,507	Hawaiian Islands	21,008	22,405
Straits Settlements	63,505	70,803	Peru	15,378	17,045
India	59,712	65,643	Chile	9,367	10,011
Philippine Islands	53,591	59,163	Society Islands ..	8,709	9,393

The quantity of bunker coal taken from New South Wales by oversea vessels was about 1,174,000 tons.

The distribution of the total output from New South Wales collieries during the last five years was as follows, the particulars given of quantity exported including coal shipped as bunker coal:—

COAL.—DISTRIBUTION OF OUTPUT, NEW SOUTH WALES, 1917 TO 1921.

Year.	Exports to Australian Ports.	Exports to Foreign Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1917	2,225,228	1,038,569	5,029,070	8,292,867
1918	2,697,033	724,643	5,641,500	9,063,176
1919	1,891,317	1,611,701	5,128,536	8,631,554
1920	2,270,556	2,716,235	5,729,208	10,715,999
1921	2,752,810	2,771,949	5,268,628	10,793,387

Of the total coal exports from New South Wales, amounting in 1921 to 5,525,000 tons, about 4,589,000 tons were shipped from the port of Newcastle.

The figures quoted above are given on the authority of the New South Wales Mines Department.

5. **Consumption in Australia.**—An estimate of the consumption of coal in Australia may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shows the consumption computed in the manner specified, for the last five years:—

COAL.—CONSUMPTION, AUSTRALIA, 1917 TO 1921.

Year.	Quantity of Coal Consumed.		
	Home Produce.	Produce of Other Countries.	Total.
	Tons.	Tons.	Tons.
1917	8,985,599	65,512	9,051,111
1918	9,866,323	23,777	9,890,100
1919	9,036,623	64,673	9,101,296
1920	10,132,442	26,828	10,159,270
1921	9,776,978	9,457	9,786,435

The bunker coal taken away in 1921 was estimated at 1,508,000 tons.

6. Prices.—(i) *New South Wales*. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realizing a much higher rate than the southern or western product. The average rate in each district during the last five years was as follows:—

COAL.—PRICES, NEW SOUTH WALES, 1917 TO 1921.

Year.				Northern District.	Southern District.	Western District.
				Per Ton. s. d.	Per ton. s. d.	Per ton. s. d.
1917	..	..	..	11 5.14	9 11.89	7 11.92
1918	..	..	..	11 8.03	9 10.32	8 8.04
1919	..	..	..	13 5.81	11 9.64	9 4.19
1920	..	..	..	15 2.95	13 4.45	11 8.01
1921	..	..	..	17 6.75	16 6.00	12 10.46

(ii) *Victoria*. In Victoria the average price of coal in 1917 was 14s. 5d.; in 1918, 15s. 11d.; in 1919, 17s. 7d.; in 1920, 21s.; and in 1921, 23s. 5d. per ton. These averages are exclusive of brown coal, the production of which in 1921 was valued at 7s. 10d. per ton.

(iii) *Queensland*. Prices in the principal coal-producing districts during the last five years were as follows:—

COAL.—PRICES, QUEENSLAND, 1917 TO 1921.

District.	Value at Pit's Mouth.				
	1917.	1918.	1919.	1920.	1921.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich	10 8	11 0	12 7	14 7	16 6
Darling Downs	12 9	13 5	14 10	16 7	18 10
Wide Bay and Maryborough	15 10	16 9	19 2	23 3	27 3
Rockhampton	11 10	12 4	13 4	16 1	15 6
Clermont	11 5	10 5	11 2	13 0	14 4
Bowen (State Coal Mine) ..	..	..	15 0	15 10	16 3
Mount Mulligan (Chillagoe)	15 6	16 6	17 8	19 0	19 10
Average for State ..	11 5	11 8	13 2	15 2	17 5

The readjustment of prices and wages in the industry was responsible for the increases in the averages during the last four years.

(iv) *Western Australia*. The average price of the Collie (Western Australia) coal during the last five years was as follows:—In 1917, 11s. 9d.; in 1918, 12s. 1d.; in 1919, 13s. 5d.; in 1920, 15s. 2d.; and in 1921, 17s. 4d. per ton.

(v) *Tasmania*. The average price per ton of coal at the pit's mouth in Tasmania for the five years 1917 to 1921 was—In 1917, 12s. 2d.; in 1918, 12s. 6d.; in 1919, 14s. 2d.; in 1920, 16s. 11½d.; and in 1921, 19s. 1d. per ton.

7. Prices in the United Kingdom.—During the five years 1916 to 1920 the average value of coal at the pit's mouth in the United Kingdom rose rapidly, the price in 1916 being 15s. 7d.; in 1917, 16s. 9d.; in 1918, 20s. 11d.; in 1919, 27s. 4d.; and in 1920, 34s. 7d. per ton.

8. Employment and Accidents in Coal Mining.—The number of persons employed in coal mining in each of the States during the year 1921 is shown below. The table also gives the number of persons killed and injured, with the proportion per 1,000 employed, while further columns are added showing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations. A further table gives the rate of fatalities during the last five years.

According to the report of the Chief Inspector of Mines for Great Britain, the average death-rate per 1,000 miners from accidents in coal mines during the quinquennium 1915-19 was 1.27, while, as shown in the table following, the rate for Australia for the quinquennium, 1917-1921, was 1.72. In the United States the fatality rate per 1,000 employees, as stated in "The Mineral Industry," was 3.94 in 1918, 4.39 in 1919, and 3.63 in 1920.

COAL MINING.—EMPLOYMENT AND ACCIDENTS, 1921.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1,000 Employed.		Tons of Coal Raised for each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ..	21,265	19	113	0.89	5.31	568,100	95,500
Victoria ..	1,994	5	11	2.51	5.52	118,800	54,000
Queensland ..	2,637	(a) 77	24	29.20	9.10	12,400	39,800
Western Australia ..	870	1	52	1.15	5.98	468,800	9,000
Tasmania ..	206	..	10	..	48.54	..	6,600
Total ..	26,972	102	210	3.78	7.79	126,300	61,300

(a) 75 deaths were due to an explosion of coal-dust at Mount Mulligan.

The figures for New South Wales include a small number of shale miners. Owing to lack of uniformity in the definition of "injury," the figures relating to persons injured possess little value.

The next table shows the average number of miners employed, the number of fatalities, and the rate per 1,000 during the quinquennium 1917-21 :—

COAL MINING.—FATALITIES, 1917 TO 1921.

State.	Average No. of Coal Miners.		Average No. of Fatal Accidents.	Rate per 1,000 Employed.
New South Wales	18,734	18	0.96
Victoria	1,868	3	1.61
Queensland	2,353	19	8.07
Western Australia	723	1	1.38
Tasmania	201	..	..
Total	23,879	41	1.72

The abnormally heavy rate in Queensland is due to the inclusion of the 75 deaths in 1921 caused by the disastrous explosion of coal-dust at Mount Mulligan. For the quinquennium 1916-20 the Queensland rate was 1.79, and for the whole of Australia 1.14.

§ 11. Coke.

1. **Production.**—Notwithstanding the large deposits of excellent coal in Australia there was, prior to the war, a fairly considerable amount of coke imported from abroad. During recent years, however, a high standard of excellence has been attained in the local product, and the necessity for import has therefore disappeared. The table hereunder gives the production in New South Wales during the last five years :—

COKE.—PRODUCTION, NEW SOUTH WALES, 1917 TO 1921.

Year	..	..	..	1917.	1918.	1919.	1920.	1921.
Quantity ..	tons			455,587	608,492	424,773	567,569	592,097
Value, total ..	£			541,093	647,798	550,127	844,191	1,029,694
Value, per ton ..	..			23s. 9d.	21s. 4d.	25s. 11d.	29s. 9d.	34s. 9d.

During recent years the industry has made considerable progress, and with the development of local iron and steel works, as well as metal refineries and smelting establishments, its future prospects ought to be assured.

A small quantity of coke is made in Queensland, the quantity returned in 1921 being 7,557 tons, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shows the amount manufactured locally during the last five years:—

COKE.—PRODUCTION, QUEENSLAND, 1917 TO 1921.

Year	1917.	1918.	1919.	1920.	1921.
Quantity .. tons	13,399	14,437	4,562	19,653	7,557

Information regarding the exact quantity of coke imported from New South Wales and elsewhere is not available.

In order to avoid duplication with coal values the returns for coke have not been included in the general tables of mineral production in the early part of this chapter.

§ 12. Oil Shale and Mineral Oil.

1. **Production.**—(i) *New South Wales.* The production of kerosene shale amounted during 1921 to 32,489 tons, valued at £77,380, as compared with 21,004 tons valued at £46,082 in 1920. The whole of the yield in 1921 was obtained in the Western District, chiefly from the Wolgan Valley deposits. Recently an attempt was made at Newnes to retort the shale in situ, supplying sufficient air from the workings to maintain combustion, but apparently the process was not satisfactory. Up to date there has been no production of petroleum in the State, but prospecting operations were continued during 1921 in several localities, and boring was undertaken at Auburn Vale in the Inverell division, at Yerrinbool, near Mittagong, at Parkville in the Scone division, and near Tamworth.

(ii) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii) *Queensland.* The discovery of natural gas and traces of oil in a deep bore at Roma fostered the hope that energetic development would lead to the discovery of mineral oil in quantity in this locality. During 1919 the bore reached a depth of 3,705 feet, but further drilling operations were suspended owing to the tools getting fast in the bore early in the year. In February, 1920, a start was made with the work of attempting to recover the tools, but after using various devices without success the task was abandoned. Attempts made at the recovery of the petroliferous gas were also unsuccessful. Oil-bearing shales are common in many parts of the State, but their extent and nature have not yet been accurately determined. It has been stated that borings have not yet penetrated to a sufficient depth to properly test the strata for oil and gas.

(iv) *South Australia.* Bitumen is occasionally washed up on the Southern coasts of the continent from Port Davey in Tasmania to Cape Leeuwin in Western Australia. Specimens found on Kangaroo Island at one time led to the belief that they were the product of a terrestrial petroliferous area. Expert opinion now, however, inclines to the idea that the material is sea-borne, but the source of origin is unknown. Similar occurrences of this mineral have been reported from the coasts of California, South Africa, and New Zealand. In 1920 the finding of accumulations of oily matter on the shores at Encounter Bay and Kangaroo Island was reported, but investigations by the Mines Department into the geological conditions of the surrounding country do not encourage the hope that the matter is of local origin. Early in 1922 the Government Geologist reported that a bore on Kangaroo Island, which reached a depth of 307 feet, had penetrated rocks so dense in texture, broken, and tilted, that they could not be regarded as possible reservoirs of petroleum.

(v) *Western Australia.* In this State the chief interest in the search for oil centres in the Kimberley division. At Mount Wynne, in West Kimberley, the gas which bubbles freely in a hot spring has been found to contain hydrocarbons. Indications of free petroleum have been obtained in bores on Price's Creek, about 100 miles south-east of Mount Wynne, and traces of mineral oil have been detected in a seepage. In East Kimberley a black bitumen, residual from an asphaltic oil, has been found in weathered basalt in two localities five miles apart, thus indicating the former circulation of petroleum in the area. Private prospectors reported the occurrence of petroleum in bores put down on the Upper Fitzgerald River on the south coast, but official investigation proved the supposed indications to be misleading.

(vi) *Tasmania.* Tasmanite shale has been discovered in the basins of the Mersey, Don, and Minnow Rivers, and elsewhere, and the Government Geologist estimates the probable capacity of the beds at 12,000,000 tons. Production during the last ten years has, however, been small, the largest yield being in 1916, when 1,286 tons were raised. For 1921 the output was 868 tons valued at £1,506. The Mines Department proposed during 1922 to make a detailed investigation of the oil shale resources of the State, and to determine the method of retorting best suited to the type of shale.

(vii) *Northern Territory.* Considerable activity has recently been displayed by speculators in acquiring areas under coal and oil prospecting licences along the north-western boundary of the Territory, and northerly along the western coast to the Daly River, but no developments have yet been recorded.

(viii) *Papua.* In 1911 indications of petroleum were reported near the Vailala River, and, acting on the reports of geologists, an oil-expert was despatched by the Commonwealth Government to sink trial bores on the site. Early in 1913 a small quantity of oil was obtained from a shallow bore. Later on, extensive geological surveys were made of the country between Yule Island and the Purari Delta, and oil was encountered in several trial bores. In 1919 the Anglo-Persian Oil Co., under agreement with the British and Commonwealth Governments, and latterly with the Commonwealth Government only, has been engaged in work on the field. A geological survey and examination has been made of the Papuan Gulf Coast north-west from Yule Island to the Kapuri River district, and a re-examination of areas in the Vailala River area.

2. *Exports.*—In 1916–17 New South Wales exported a small quantity of shale. There was no export in the succeeding year. In 1919, 5 tons, valued at £21, were exported, in 1920, Victoria was credited with an export of 4 tons, and in 1921, New South Wales exported 103 tons, valued at £440.

3. *Shale Oil Bounties.*—The Shale Oil Bounty Act 1917–22 provides for bounty amounting to £270,000 in accordance with the following scale:—On each gallon up to $3\frac{1}{2}$ millions, $3\frac{1}{2}$ d. per gallon; over $3\frac{1}{2}$ millions up to 5 millions, 2d.; over 5 millions to 8 millions, $1\frac{3}{4}$ d.; and over 8 millions, $1\frac{1}{2}$ d. The maximum amount payable in a year is £67,500.

On the 2nd January, 1920, the Commonwealth Government offered a reward of £10,000 for the discovery of petroleum oil in Australia, subject to the fulfilment of certain conditions. The reward was increased to £50,000 on the 9th September, 1920. During 1920 the New South Wales Government offered the sum of £10,000 as a bonus for the production of 100,000 gallons of petroleum within the State. Under the Native Industries Encouragement Act of 1872, the Government of South Australia offered a bonus of £5,000 on the production within the State of 100,000 gallons of crude petroleum containing not less than 90 per cent. of products obtainable by distillation.

§ 13. Other Non-Metallic Minerals.

1. *Alunite.*—The production of this mineral in New South Wales amounted during 1921 to 520 tons, valued at £2,080, raised at Bullahdelah. During recent years the output has fallen considerably, owing to increasing difficulty in locating a marketable product. The mineral is sent to England for treatment, and, to the end of 1921, the exports were 55,000 tons, valued at £196,000.

In South Australia an extensive deposit of the mineral was located in 1913 at Carrickalinga Head, on the coast north of Normanville, and within a short distance of

Adelaide. Fresh discoveries were later reported on the western shores of St. Vincent's Gulf. The mineral returns show a small production of 15 tons in 1921.

The exploitation of the alunite deposits in the North-East Coolgardie field in Western Australia has been retarded pending the result of field experiments to determine the suitability or otherwise of the product as a fertilizer in its unroasted state. Deposits of the mineral are also found in the Kalgoorlie area.

2. Asbestos.—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales 945 tons, valued at £23,736, were raised during 1921 chiefly from deposits in the Barraba division, small yields being obtained also in the Gundagai and Orange divisions. In Queensland seams of asbestos have been found over a belt of country extending from Cawarral to Canoona, as well as in other districts. Samples of the fibre proved suitable for the manufacture of fibro-cement sheeting and tiles, but so far the deposits have not been commercially exploited. Deposits of asbestos have been located at various places in South Australia. Production in 1921 amounted to 40 cwt., valued at £71. Chrysotile asbestos of high grade is found in various localities in Western Australia, particularly in the Serpentine rocks between Nullagine and Roeburne, over a distance of 200 miles. The export in 1921 amounted to 235 tons valued at £13,581, obtained in the Nullagine and Marble Bar districts of the Pilbara Goldfield. In 1899 Tasmania raised 200 tons, valued at £363, but there was no further production until 1916, when a small quantity was raised at Anderson's Creek, near Beaconsfield. In 1917, 271 tons, valued at £271; in 1918, 2,854 tons, valued at £5,008, and in 1919, 51 tons, valued at £1,275, were produced, but there was no subsequent record of production.

3. Barytes.—In New South Wales during 1921 about 200 tons of barytes, valued at £600, were obtained at Mandurama in the Cowra division. A promising deposit of remarkable purity was further developed during the year at Cavan in the Yass division. The production in South Australia during 1921 was given as 1,269 tons, valued at £4,465. In this State there are extensive deposits of the mineral in the Willunga and other districts. Barytes in fair-sized veins occurs at many places in Western Australia, especially at Cranbrook in the south-west division. The export in 1921 was, however, small, being valued at under £20. About 1,000 tons of barytes, valued at £4,000, were produced in Tasmania in 1920, the greater portion being won from deposits near Queenstown and Mt. Jukes, and the balance from Beulah and elsewhere, but there was no production recorded in 1921.

4. Clays and Pigments.—Valuable deposits of clays and pigments of various sorts are found throughout Australia. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. In New South Wales the production of pigments amounted in 1921 to 443 tons, valued at £544. About 340 tons of yellow ochre were raised at Eumungerie in the Dubbo division, and small quantities of red ochre were produced in the Glen Innes and Gulgong divisions. The output of silica was approximately 19,000 tons, raised chiefly at Ulladulla, and at Marrangaroo in the Lithgow division.

Attention is being devoted to the question of the recovery of the aluminium contents of the extensive deposits of bauxite near Wingello in the Moss Vale division, and deposits in the Inverell division are also being tested with a view to their development commercially. In Victoria 2,142 tons of kaolin, valued at £1,577, were produced in 1921 from deposits at Stawell, Egerton, Bendigo, and Pyalong. A small quantity of pigments was raised from leases in the Balnarring, Gordon, Heathcote, and Strangways areas. In Queensland, 1,691 tons of fireclay, valued at £589, were mined during 1921 in the Mount Morgan district. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in Australia was erected, there are vast deposits of felspar, china stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula. Ochre deposits of fine quality are found in the Noarlunga area. Production of ochre in 1921 amounted to 197 tons, valued at £1,328. Red oxide of suitable quality as well as ochres of various hues have been found in different and widely-separated localities in Western Australia. A paint and distemper factory has been established in Perth, and this, coupled with the demand from the Eastern States, will further stimulate the search for the necessary materials. Kaolin is obtained from deposits in the Darling

Range. Porcelain and other clays of good quality have been found in Tasmania at Beaconsfield, Sorell, Hagley, etc. Oil and water paints have been made from coloured ochres from Sorell, in Tasmania, and deposits of ochre have been located near Mowbray and Beaconsfield. The production of ochre in 1921 was returned at 15 tons, valued at £56.

5. **Felspar.**—During 1921, the production of this mineral in New South Wales was 25 tons, valued at £31, raised in the Lithgow division.

6. **Fluorspar.**—At Carboona in the Tumbarumba division in New South Wales this mineral is mined with silver and lead, but no production was recorded therefrom in 1921. In Victoria 196 tons, valued at £625, were raised in 1921 by a company operating at Walwa. A company operating in 1921 at a mine near Emuford in the Herberton district in Queensland produced 536 tons, valued at £1,609.

7. **Fuller's Earth.**—Small quantities of this material were produced in 1920 from deposits in the Boggabri area of the Narrabri division, New South Wales, but there was no production recorded in 1921.

8. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, and 40 tons were raised during 1920. Owing to the low grade of the ore there is only a limited market for it, and no production was recorded in 1921. In Victoria the mineral occurs in Ordovician slates in several of the gold-fields, but is not worked. In Queensland graphite was raised some years ago by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. There has been no production in recent years, and it is stated that the prospects are not promising for flake graphite, although encouraging for the amorphous variety. In South Australia deposits are found at various places in Eyre's Peninsula. While a large proportion of the product is not suitable for commercial use, the work so far done shows that flake graphite containing as high as 80 per cent. carbon can be obtained. The Government is offering a bonus of £1 per ton for the production of graphite containing not less than 80 per cent. carbon, and on graphite with a smaller percentage, a bonus proportionate to the carbon content. In Western Australia deposits occur at Munghlinup Creek, near the Oldfield River, at Northampton, in the Murchison division, and on the Donnelly River at Kendenup, about 40 miles from Albany. Production in 1920 was small, amounting to 13 tons, valued at £130, and none was recorded in 1921.

9. **Gypsum.**—The output of gypsum in New South Wales during 1921 was 300 tons, valued at £210, and was obtained in the Hillston division. In Victoria during 1921 there was a production of 11,139 tons, valued at £6,914, of which 4,303 tons were raised at Boort, 2,502 tons at Lake Boga, 2,055 tons at Lascelles, 1,580 tons at Bolton, 565 tons at Cowangie, and 134 tons at Chillingollah. Numerous deposits of gypsum are found in Southern Yorke's Peninsula in South Australia. The production in 1921 amounted to 34,000 tons, valued at £29,000. Gypsum is widely distributed in Western Australia in tertiary and late tertiary deposits associated chiefly with the salt lakes of the arid regions of the interior south of the tropics. Many of these lacustrine deposits are capable of yielding large tonnages. The production in 1921 amounted to 664 tons, valued at £622, obtained at Koorda.

10. **Magnesite.**—Deposits of this mineral have been discovered at several localities in New South Wales. During 1921 the output was 12,268 tons, valued at £14,407, of which about 6,000 tons were raised at Attunga in the Tamworth division, 5,000 tons in the Fifield division, while small quantities were raised in the Bingara and Cobar divisions. The mineral is found at Heathcote in Victoria, where 128 tons, valued at £384, were produced in 1921. There are deposits in the neighbourhood of Rockhampton and Bowen in Queensland, and a deposit of exceptional purity has been located in the vicinity of Tumby Bay in South Australia, about five miles from the township of Tumby. The cost of transport is a drawback to the production from the Copley (Leigh Creek) district. The Broken Hill Co. is working a small deposit near the Beetaloo Waterworks. Production in 1921 amounted to 172 tons, valued at £373. A large area of magnesite-bearing country has been located in Western Australia at Bulong, about 20 miles east of Kalgoorlie. The mineral is of a high degree of purity, but there has been no production of importance since 1915.

11. Phosphate Rock.—During 1921 about 200 tons of phosphate, valued at £50, were obtained in New South Wales at Molong and Borenore. In Victoria 1,541 tons, valued at £1,541, were raised at Mansfield. The production in Queensland amounted to 369 tons, valued at £1,570, raised by the Holbourne Island Phosphate Company in the Bowen district. South Australia possesses deposits scattered over a wide area between Willunga in the south and Carrieton in the north, and between Clinton on Yorke Peninsula and Bright to the north of Eudunda. Production in 1921 amounted to 5,079 tons, valued at £6,203. In Western Australia the known phosphate deposits occur principally on the coastal islands, and in portion of the coastal plain between Dongarra and Perth. Some years ago guano digging on the islands was a large and profitable industry.

12. Salt.—Salt is obtained from salt lakes in the Western and North-western districts of Victoria, and from salterns in the neighbourhood of Geelong. Figures regarding production are, however, not available for publication. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about 60 square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery. It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore put down near Kingscote, on Kangaroo Island, revealed brine from which salt can be profitably obtained by evaporation. About 56,000 tons of crude salt, valued at £127,000, were produced during 1921. In Western Australia salt is obtained from depressions in the calcareous sandstones of the coast, which are filled to a shallow depth in winter with salt water. In summer the depressions dry up, leaving a layer of salt two or three inches thick, which is collected and refined. Up to the present, the four chief localities producing salt were Rottnest Island, off Fremantle; Middle Island, near Esperance; Yarra Yarra Lakes, near Three Springs; and Lynton, near Port Gregory. There is a very large number of salt and brine lakes which may ultimately be used as sources of salt.

Attention has recently been devoted to the occurrence of salt in Queensland, more especially to the deposits in the vicinity of the Mulligan River.

13. Tripolite, or Diatomaceous Earth.—Although this mineral has been found at various localities in New South Wales, the deposits have not been worked commercially on any considerable scale. The output in 1921 was 206 tons, valued at £584, of which 117 tons were raised in the Cooma division, and 89 tons at Bell's Gully in the Barraba division. In Victoria there is a remarkably pure deposit at Lillieur, near Talbot, while beds of the mineral are also met with at other places in the Loddon Valley, near Ballarat, at various places close to Melbourne, at Craigieburn, Lancefield, Portland, Swan Hill, Bacchus Marsh, etc. During 1920, a production of 1,000 tons, valued at £5,000, was recorded, but no production was returned for 1921. Fairly extensive deposits of diatomite exist in Queensland, in the Nerang, Beaudesert and Canungar areas, but the various outcrops have as yet been only partly examined. In Tasmania a deposit of diatomaceous earth has been located at Oatlands, but its use for the manufacture of explosives is apparently prejudiced by the circumstances that the diatoms are pulverized and contaminated with clay.

§ 14. Gems and Gemstones.

1. Diamonds.—It is difficult to secure accurate returns in connexion with the production of precious stones, but the yield of diamonds in 1921 in New South Wales was estimated at 1,563 carats, valued at £1,915, while the total production to the end of 1921 is given at 200,000 carats, valued at £142,000. The yield in 1921 was contributed chiefly by miners working in the vicinity of Copeton, in the Tingha division, and at Staggy Creek, in the Inverell division. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district, at Kongbool in the Western District, and near Benalla. The stones are generally small, and the production up to date has been trifling. In 1912, eleven small diamonds, valued

at £20, were picked out of the sluice boxes of the Great Southern alluvial mine at Rutherglen. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70. A few small diamonds have, from time to time, been found in Tasmania, chiefly while sluicing for gold in the Donaldson district.

2. Sapphires.—The production of sapphires in New South Wales during 1921 was returned as 1,683 ozs., valued at £2,976, of which 1,583 ozs., valued at £2,926, were obtained on the Inverell field, and 100 ozs., valued at £50, in the Tingha division.

In Queensland, sapphires to the value of £46,524 were obtained in 1921 on the Anakie mineral field. The stones were classified as follows:—Parcel blues, £40,354; fancy stone, locally cut, £1,192; and mechanical stones, machine and corundum, £4,977. Under the agreement between the Government and Messrs. Rubin Bros. buying was resumed in February, and £20,000 worth of stones were purchased, the average price for first grade parcel blues being £7 11s. Buying was continued on a smaller scale till September, when the agreement with Rubin Bros. was terminated. Attempts at development of the gem deposits at Woodbine or Diamond Hills met with little success. The stone is of inferior quality to that obtained on the Anakie field, although a little was disposed of at satisfactory prices.

Sapphires are plentifully found in the tin drifts of the Ringarooma and Portland districts in Tasmania, but the stones are, as a rule, small and not worth saving.

3. Precious Opal.—The estimated value of the opal won in New South Wales during the year 1921 was £13,020, compared with £23,600 in the preceding year. The great bulk of the yield came from the Lightning Ridge field, near Walgett, the production being returned as £12,500. Small yields were reported from White Cliffs, and from the Ballina division. Some very fine stones are at times obtained, one weighing 5 ozs. and valued at £300 being recovered in 1911. Occasionally, black opals of very fine quality are found, one specimen from the Wallangulla field, weighing $6\frac{1}{2}$ carats, being sold in 1910 for £102, while in the early part of 1920 a specimen realized £600. It is stated that this locality is the only place in the world where the "black" variety of the gem has been found. The total value of opal won in New South Wales since the year 1890 is estimated at £1,511,000.

Small quantities of precious opal are found in the Beechworth district in Victoria.

The opaliferous district in Queensland stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1921 was estimated at £500, and up to the end of that year at about £180,000. These figures are, however, merely approximations, as large quantities of opal, of which no record is obtained, are disposed of privately. At present the industry, which is not followed by practical miners, suffers from the peculiar disability that in good seasons there is plenty of work available on the pastoral stations, and most men prefer this to the uncertain results obtainable by fossicking, while in dry seasons, when constant work is not obtainable, the search for opal is blocked by the absence of grass and water on the fields.

Owing to difficulty in disposing of the product, little mining was carried on in 1921 at the Stuart's Range opal fields in South Australia. The miners, on the advice of experts, made no attempt to dispose of their produce on an unwilling market. No value was, therefore, assigned by the Mines Department to the yields obtained.

According to a report by the Australian Trade Commissioner in the East there is a good sale for the gems in China. It is stated that there is no difficulty in cutting and polishing, as the Chinese method of dealing with jade, dating back many centuries, can also be applied to opal. The Commissioner is also making inquiries into the possibilities of markets in Java and India.

4. Other Gems.—Various other gems and precious stones have from time to time been discovered in the different States, the list including agates, beryls, chiastolite, emeralds, garnets, rubies, topazes, tourmaline, turquoises, and zircons, but none of these figured in the returns of production for 1921.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. **Total Employment in Mining.**—The number of persons engaged in the mining industry in Australia fluctuates according to the season, the price of industrial metals, the state of the labour markets, and according also to the permanence of new finds, and the development of the established mines. During the year 1921 the number so employed was as follows :—

NUMBER OF PERSONS ENGAGED IN MINING, 1921.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ..	1,516	3,150	109	1,321	21,265	2,340	29,701
Victoria ..	3,050	..	..	31	1,994	136	5,211
Queensland ..	722	229	675	864	2,637	720	5,847
South Australia ..	100	..	1,000	..	..	920	2,020
Western Australia ..	6,019	41	36	59	870	59	7,084
Tasmania ..	67	352	1,361	699	206	485	3,170
Northern Territory ..	10	..	6	100	..	15	131
Australia ..	11,484	3,772	3,187	3,074	26,972	4,675	53,164

The following table shows the number of persons engaged in mining in Australia during each of the years 1891, 1901, and 1921, together with the proportion of the total population so engaged. The general falling-off since 1901 is due to the stagnation caused by the war, the low price of industrial metals, and largely also to the decline in the gold-mining industry :—

NUMBER ENGAGED IN MINING PER 100,000 OF POPULATION, 1891, 1901, AND 1921.

State.	1891.		1901.		1921.	
	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.
New South Wales ..	30,604	2,700	36,615	2,685	29,701	1,408
Victoria ..	24,649	2,151	28,670	2,381	5,211	339
Queensland ..	11,627	2,934	13,352	2,664	5,847	765
South Australia ..	2,683	834	7,007	1,931	2,020	406
Western Australia ..	1,269	2,496	20,895	11,087	7,084	2,126
Tasmania ..	3,988	2,695	6,923	4,017	3,170	1,486
Northern Territory ..	..	..	..	..	131	3,351
Australia ..	74,820	2,341	113,462	2,992	53,164	974

2. **Wages Paid in Mining.**—Information regarding wages paid in the mining industry, which in earlier issues of the Year Book was given in this chapter is now contained in the Labour Report issued by this Bureau.

3. **Accidents in Mining, 1921.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1921 :—

MINING ACCIDENTS, 1921.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Australia.
KILLED.								
Coal and shale	19	5	77	..	1	..	..	102
Copper ..	..	..	1	1	..	3	..	5
Gold ..	2	5	..	..	15	..	..	22
Silver, lead, and zinc ..	1	..	..	..	..	..	..	1
Tin ..	1	..	..	..	1	..	..	2
Other minerals	..	..	..	..	..	..	..	..
Total ..	23	10	78	1	17	3	..	132
INJURED.								
Coal and shale	113	11	24	..	52	10	..	210
Copper ..	..	..	4	2	..	19	..	25
Gold ..	2	2	8	..	292	..	..	304
Silver, lead, and zinc ..	19	..	2	..	..	3	..	24
Tin ..	1	..	..	..	..	2	..	3
Other minerals	..	..	3	..	..	1	..	4
Total ..	135	13	41	2	344	35	..	570

The fatalities in Queensland collieries were considerably greater in 1921 than in any previous year, owing to the disastrous explosion of coal dust at Mount Mulligan, which resulted in the loss of 75 lives.

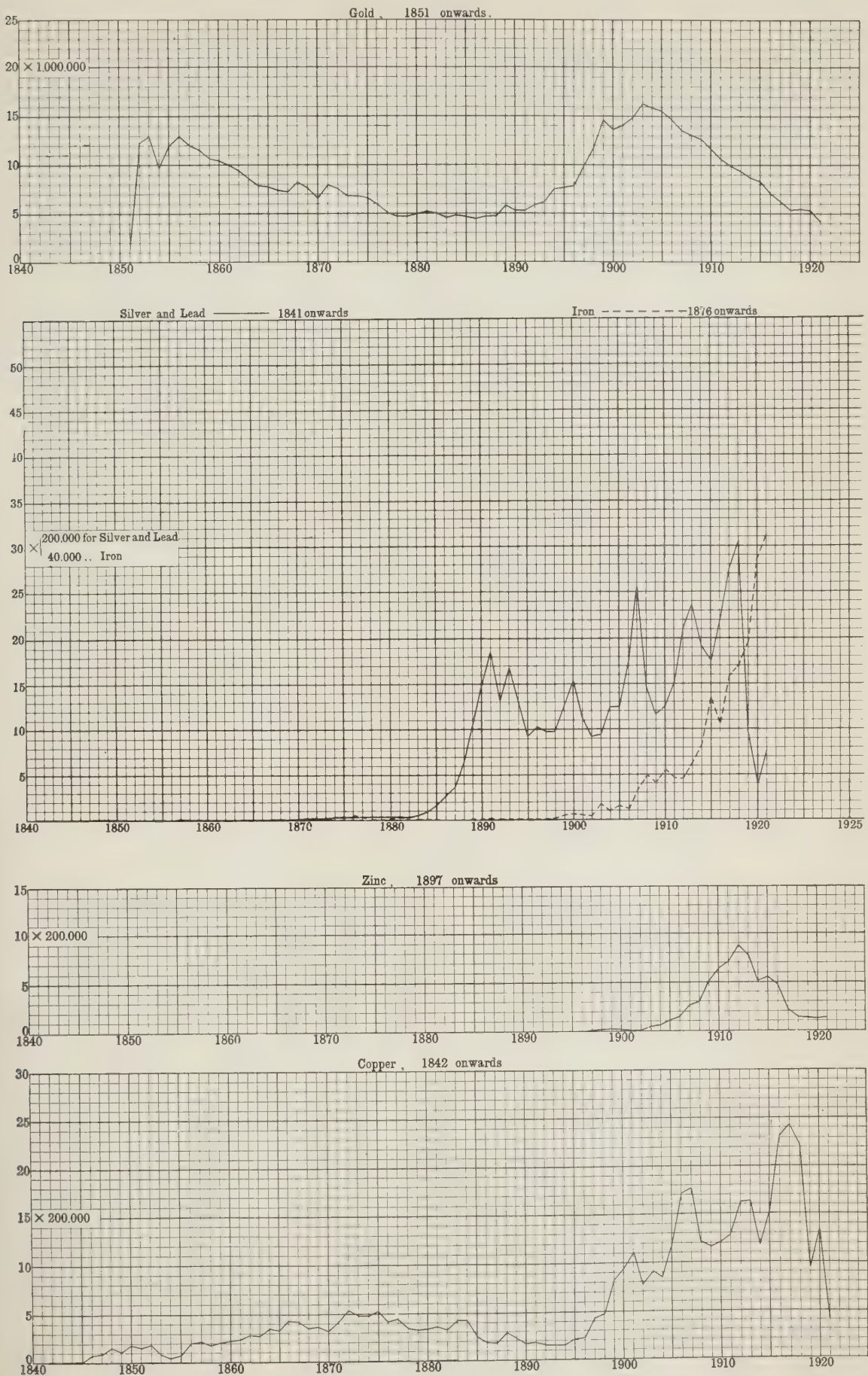
§ 16. State Aid to Mining.

1. **Introduction.**—The terms and conditions under which the States granted aid in mining were alluded to at some length in previous issues (see Year Books 4 and 5), but owing to considerations of space they have been omitted from this issue. A résumé of what is being done in this direction at the present time is given hereunder.

2. **New South Wales.**—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1921 the total sum expended in this manner amounted to £515,448, of which £10,411 was advanced in 1921. A sum of £1,000 was made available during the year for the purpose of assisting in the erection of crushing batteries or reduction plants, and the allotments therefrom amounted to £200.

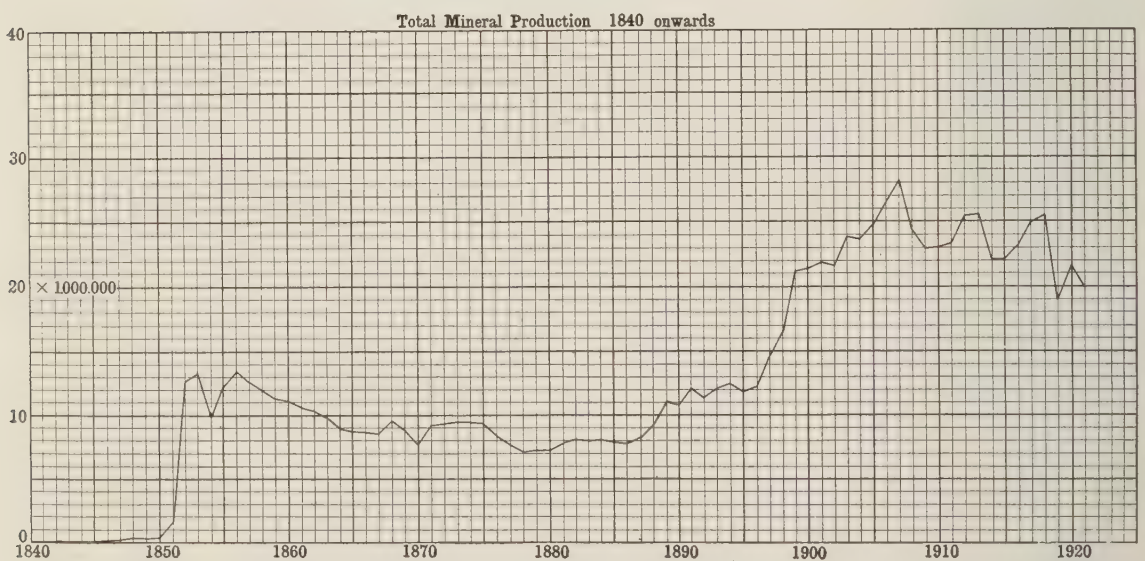
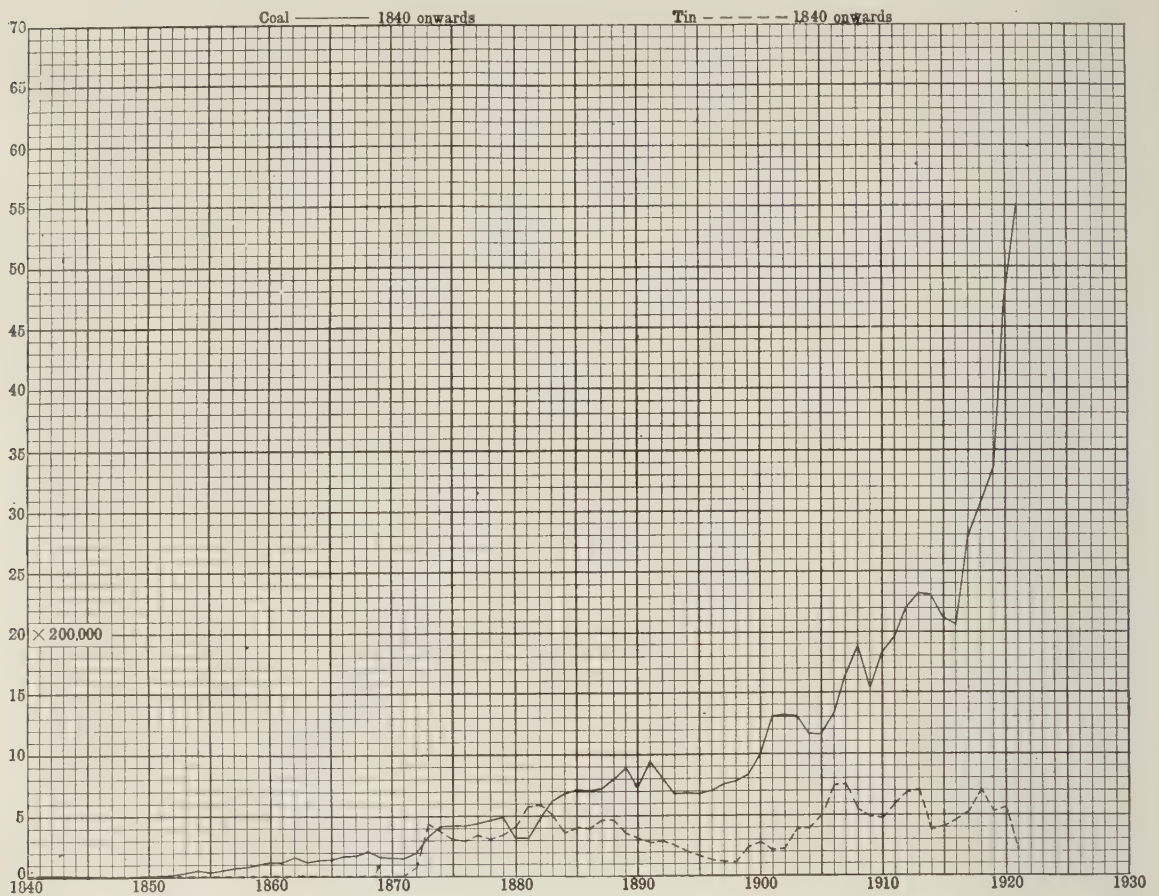
3. **Victoria.**—Since the passage of the Mining Development Act in 1897, the expenditure under its varying provisions has been £943,633, of which £272,849 was disbursed in connexion with advances to companies, £292,836 on boring, £192,535 on mining enterprise, £99,150 on advances to miners, and £86,263 on maintenance, removal, etc., of batteries. The expenditure for the financial year 1921–22 amounted to nearly £23,000, about half of which was spent on boring for gold and coal. During this year the Morning Star Gold Mine at Wood's Point made a further payment of £10,000, thus completing the repayment of the sum of £14,000 advanced on loan by the Department.

VALUES OF THE PRINCIPAL MINERALS PRODUCED—AUSTRALIA, 1840 TO 1921.



EXPLANATION.—The values shown are those of the total Australian production of certain of the most important minerals in successive years from 1840 to 1921.

The base of each small square represents an interval of one year, and the vertical height represents in the case of gold £1,000,000; in the case of silver and lead, zinc, and copper £200,000; and in the case of iron, £40,000.

VALUES OF PRINCIPAL MINERALS PRODUCED—AUSTRALIA, 1840 TO 1921—*continued.*

EXPLANATION.—The values shown are those of the total Australian production of certain of the most important minerals in successive years from 1840 to 1921.

The base of each small square represents an interval of one year, and the vertical height represents in the case of coal and tin £200,000, and in the case of total mineral production £1,000,000.

4. **Queensland.**—State assistance to the mining industry in 1921 amounted to £24,291, of which £5,521 consisted of loans in aid of deep sinking ; £12,989 grants in aid of prospecting ; £1,281 in aid of roads and bridges to gold and mineral fields ; and £4,500 for the purchase of land at Styx River.

During the year the copper furnace at the Chillagoe State Smelters was in blast for 152 days, and smelted 28,506 tons for a production of 946 tons of blister copper. The State Arsenic Works at Jibbinbar produced 258 tons of high-grade arsenic. Tin, wolfram, and molybdenite are treated at the State Battery at Bamford, which, on account of low prices, only worked intermittently during the year. A new State battery was in course of erection at Kidston on the Etheridge gold-field. The State Assay Office at Cloncurry was fully employed, and a new and more efficient plant has been installed.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1921 the total amount of subsidy paid was £65,109, of which £12,125 has been repaid, and £2,250 written off, leaving a debit of £50,734. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Repayments must be provided from profits, but in only two instances have the profits enabled a full return to be made.

6. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1921 in accordance with the subjoined statement :—Advances in aid of mining work and equipment of mines with machinery, £24,625 ; aid to prospectors, £7,399 ; advances in aid of boring, £5,648 ; subsidies paid on stone crushed for the public, £270 ; making a total of £37,942. In addition a sum of £6,917 was expended on various matters such as water supply, assistance in carting ore for long distances, aid in developmental work below the 100 feet level in small mines, and rebates to prospectors working low-grade mines. The receipts under the Act, exclusive of interest payments, came to £1,120, of which £734 consisted of refunds of advances.

In 1921 there were 29 State batteries in operation. The amount expended thereon up to the end of 1921 was £91,981 from revenue and £302,090 from loan, giving a total of £394,071. During the year receipts amounted to £36,522, and working expenditure to £44,324.

The total value of gold and tin recovered to the end of 1921 at the State plants was £5,496,000, resulting from the treatment of 1,318,000 tons of gold ore and 80,000 tons of tin ore, together with a small amount from residues.

7. **Tasmania.**—During the year 1921, the sum of £5,261 was expended in aid to mining, including £475 for salaries, £106 for assay material, £803 assistance to prospectors, and advances of £2,194 and £1,200 to the No. 2 and No. 6 Argent Prospecting Syndicates respectively. The receipts amounted to £1,110 of which £1,050 represented royalty by tributers.

Tributers' surveys and assays are made free of charge by the Assay and Survey Office at Zeehan.

8. **Northern Territory.**—A sum of £1,634 was expended in 1920–21 in subsidies in aid of underground development, while aid granted to prospectors amounted to £855.

The Government maintains batteries at Marranboy and Hayes Creek, and the Government Assayer makes free assays for prospectors and others.

§ 17. Commonwealth Government Control of Industrial Metals.

The proclamation under the Customs Act prohibiting the exportation of metals without the consent of the Minister for Trade and Customs is still in force, but consent is granted in every case where the contract relating to the sale of the metals has been registered with the Australian Metal Exchange.

§ 18. Metallic Contents of Ores, etc., Produced and Exported.

1. **Local Production.**—According to returns compiled by the Secretary of the Australian Metal Exchange from information obtained from mining companies and metal smelting and refining works, the quantities of the principal metals (exclusive of gold) extracted in Australia during the five years 1918 to 1922 were as follows :—

REFINED METALS PRODUCED IN AUSTRALIA, 1918 TO 1922.

Metal.			1918.	1919.	1920.	1921.	1922.
Silver ..	..	ozs.	9,924,322	6,696,788	681,370	4,572,878	7,896,052
Lead, pig ..	..	tons	166,731	82,732	4,077	55,749	105,528
Zinc ..	..	tons	10,029	6,544	9,665	1,681	23,724
Copper ..	..	tons	44,018	16,182	24,069	18,600	11,524
Tin ..	..	tons	4,582	4,102	4,108	2,985	2,657

2. **Metallic Contents of Ores, Concentrates, etc., Exported.**—The estimated metallic contents of ores, concentrates, etc., exported during the five years 1918 to 1922 are given in the following table :—

METALLIC CONTENTS OF ORES, CONCENTRATES, ETC., EXPORTED, 1918 TO 1922.

Metal.		Contained in—	1918.	1919.	1920.	1921.	1922.
Silver	ozs. {	Lead—Silver—Gold Bullion	..	..	141,263	64,811	165,290
		Lead Concentrates	..	..	..	210,944	281,728
		Zinc Concentrates	..	..	..	456,317	3,390,964
		Total	5,666,609	1,161,754	1,122,154	732,072	3,837,982
Lead	tons {	Lead—Silver—Gold Bullion	..	..	1,939	580	1,790
		Lead Concentrates	..	..	4,122	3,950	2,959
		Zinc Concentrates	..	..	6,345	2,498	19,910
		Total	32,653	7,463	12,406	7,028	24,659
Zinc	tons {	Lead Concentrates	..	..	..	435	..
		Zinc Concentrates	..	..	..	19,181	135,690
		Total	23,335	20,608	24,242	19,616	135,690
Copper	tons	Ores, Matte, etc.	..	..	2,117	34	326
Tin	tons	Concentrates .. ..	..	..	70	5	..

§ 19. Oversea Exports of Metals, Ores, etc.

The quantities and values of the principal metals, ores, and concentrates of Australian produce exported overseas as recorded by the Customs Department for the year 1921–22 were as follows :—Antimony ore, 712 tons, £15,001 (631 tons to United Kingdom); zinc, bars, blocks, slabs or cakes, 7,953 tons, £236,242 (1,000 tons to United Kingdom); zinc concentrates, 120,428 tons, £586,329 (46,331 tons to United Kingdom and 59,691 tons to Belgium); copper ingots, 9,382 tons, £704,988 (8,973 tons to United Kingdom); tin ingots, 1,774 tons, £284,357 (1,056 tons to United Kingdom and 503 tons to United States); lead, pig, 72,910 tons, £1,720,754 (54,902 tons to United Kingdom and 13,091 tons to Japan); lead, matte, 434 tons, £9,587 (424 tons to United Kingdom); silver and lead concentrates, 7,868 tons, £95,881 (2,521 tons to Belgium and 5,347 tons to Germany); platinum, osmium, iridium, etc., 1,907 ozs., £35,988 (746 ozs. to United Kingdom and 1,134 ozs. to United States); and pig iron, 1,140 tons, £11,738 (1,023 tons to New Zealand).

CHAPTER XXII.

MANUFACTURING INDUSTRY.

[NOTE.]—In the case of Queensland, Western Australia, and Tasmania the year ends on the 31st December, and in New South Wales, Victoria, and South Australia on the 30th June, six months later.

In all tables relating to employees—except where specially mentioned—"Number of Employees" includes working proprietors.

§ 1. Number and Classification of Factories.

1. **General.**—The number of factories in each State does not necessarily furnish an accurate indication of the extent or progress of manufacturing throughout Australia, since the larger establishments in many cases tend to absorb smaller enterprises, while on the other hand new factories are constantly springing up, and small plants are as numerous as large ones.

2. **Number of Factories in each State, 1918 to 1921-22.**—The following table gives the number of factories in each State for the years 1918 to 1921-22 :—

FACTORIES.—NUMBER IN EACH STATE, 1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
1918 ..	5,414	5,627	1,778	1,285	764	553	15,421
1918-19 ..	5,460	5,720	1,778	1,313	764	553	15,588
1919-20 ..	5,662	6,038	1,754	1,368	817	652	16,291
1920-21 ..	5,837	6,532	1,795	1,438	895	616	17,113
1921-22 ..	6,356	6,753	1,810	1,432	986	686	18,023

(a) See general note above.

3. **Classification of Factories, Australia, 1918 to 1921-22.**—The following table shows the number of factories in Australia for each year from 1918 to 1921-22, classified in the groups agreed upon by the Conferences of Statisticians in 1902 and 1906. Details in regard to some of the principal industries in these groups will be found in § 9 hereinafter :—

FACTORIES.—CLASSIFICATION, AUSTRALIA, 1918 TO 1921-22.

Class of Industry.	1918.	1918-19.	1919-20.	1920-21.	1921-22.
	(a)	(a)	(a)	(a)	(a)
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	No. 798	No. 789	No. 799	No. 772	No. 762
II. Treating oils and fats, animal, vegetable, etc. ..	90	88	92	92	99
III. Processes in stone, clay, glass, etc. ..	616	643	670	707	736
IV. Working in wood ..	1,713	1,762	1,912	2,053	2,103
V. Metal Works, machinery, etc. ..	1,836	1,872	1,974	2,133	2,181
VI. Connected with food and drink, etc. ..	2,402	2,420	2,427	2,453	2,539
VII. Clothing and textile fabrics, etc. ..	3,177	3,155	3,311	3,499	3,893
VIII. Books, paper, printing and engraving ..	1,256	1,220	1,247	1,259	1,313
IX. Musical instruments, etc. ..	27	31	37	43	45
X. Arms and explosives ..	18	17	17	17	17
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,423	1,449	1,514	1,634	1,778
XII. Ship and boat building and repairing ..	75	76	80	79	81
XIII. Furniture, bedding, and upholstery ..	722	743	817	916	927
XIV. Drugs, chemicals, and by-products ..	260	273	293	305	313
XV. Surgical and other scientific instruments ..	67	72	71	73	77
XVI. Jewellery, timepieces, and plated ware ..	187	194	215	233	247
XVII. Heat, light, and power ..	489	505	515	529	563
XVIII. Leatherware, n.e.i. ..	81	83	93	101	115
XIX. Minor wares, n.e.i. ..	184	196	207	215	234
Total ..	15,421	15,588	16,291	17,113	18,023

(a) See general note above.

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used."

The number of factories has increased continuously since 1918, but the expansion has been more marked during the past two years, when the annual additions amounted to 822 and 910 new establishments respectively. As previously pointed out, any increase or decrease in the number of factories from year to year does not necessarily indicate a change in the position of the industry.

4. Classification of Factories, States, 1921-22.—The following table shows the number of factories in each State during 1921-22, classified according to the nature of the industry :—

FACTORIES.—CLASSIFICATION, STATES, 1921-22.

Class of Industry.	N.S.W. 1921-22	Vic. 1921-22	Q'land. 1921.	S. Aust. 1921-22	W. Aust. 1921.	Tas. 1921.	Aus.
I. Treating raw material, product of agricul. & pastoral pursuits, etc.	235	293	43	100	43	48	762
II. Treating oils and fats, animal, vegetable, etc.	39	28	11	11	7	3	99
III. Processes in stone, clay, glass, etc.	312	215	43	98	48	20	736
IV. Working in wood	792	587	311	91	147	175	2,103
V. Metal works, machinery, etc.	751	902	213	189	81	45	2,181
VI. Connected with food & drink, etc.	838	708	458	242	175	118	2,539
VII. Clothing and textile fabrics, etc.	1,305	1,818	254	268	149	99	3,893
VIII. Books, paper, printing & engraving	499	480	141	88	80	25	1,313
IX. Musical instruments, etc.	27	15	..	3	..	..	45
X. Arms and explosives	4	11	..	2	..	..	17
XI. Vehicles and fittings, saddlery and harness, etc.	571	726	146	160	103	72	1,778
XII. Ship and boat building & repairing	38	71	10	10	6	6	81
XIII. Furniture, bedding and upholstery	318	366	95	69	51	28	927
XIV. Drugs, chemicals and by-products	136	124	3	17	22	11	313
XV. Surgical and other scientific instruments	16	37	11	6	7	..	77
XVI. Jewellery, timepieces & plated ware	80	109	17	21	10	10	247
XVII. Heat, light, and power	244	197	32	32	39	19	563
XVIII. Leatherware, n.e.i.	44	60	6	4	(a)	1	115
XIX. Minor wares, n.e.i.	107	66	16	21	(b) 18	6	234
Total	6,356	6,753	1,810	1,432	986	686	18,023

(a) Included in Class XIX.

(b) Includes Class XVIII.

§ 2. Classification of Factories according to Number of Employees.

1. States, 1921-22.—A more satisfactory method of measuring the importance of the manufacturing industry in Australia may, perhaps, be obtained by grouping the factories according to the average number of employees therein.

The following table shows, for each State, the number of factories classified according to the number of hands employed, and the average number of hands employed therein, during 1921-22 :—

FACTORIES.—CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES, 1921-22.

No. of Persons Employed in each Factory.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tasmania. 1921.	Australia.
NUMBER OF FACTORIES.							
Under 4	1,247	1,349	306	187	232	126	3,447
4	572	675	188	138	114	96	1,783
5 to 10	2,018	2,246	587	534	309	264	5,958
11 to 20	1,121	1,098	321	258	149	76	3,023
21 to 50	888	887	244	196	113	90	2,418
51 to 100	270	273	66	74	39	23	745
Over 100	240	225	98	45	30	11	649
Total	6,356	6,753	1,810	1,432	986	686	18,023

CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF EMPLOYEES. 837

FACTORIES.—CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES, 1921-22—*continued.*

No. of Persons Employed in each Factory.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921-22.	Tasmania. 1921.	Australia.
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AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ..	2,747	3,060	671	462	495	272	7,707
4 ..	2,288	2,700	752	552	456	384	7,132
5 to 10 ..	14,086	15,542	4,114	3,738	2,163	1,824	41,467
11 to 20 ..	16,251	16,035	4,736	3,770	2,158	1,045	43,995
21 to 50 ..	27,978	28,071	7,550	6,293	3,558	2,745	76,195
51 to 100 ..	18,758	18,744	4,668	5,240	2,526	1,561	51,497
Over 100 ..	66,768	60,724	19,757	11,116	6,771	2,296	167,432
Total ..	148,876	144,876	42,248	31,171	18,127	10,127	395,425

2. Australia, 1918 to 1921-22.—The following table shows that the proportionate number of hands employed in the larger establishments tends to increase, and that of the smaller factories to diminish. During the period under review, the ratio of hands in factories employing under 21 hands to total number of employees in all factories declined from 26.04 per cent. in 1918 to 25.37 in 1921-22. The larger establishments with 101 hands and upwards during the same period exhibited an increase from 40.80 to 42.34 per cent. of total employed. The average number of hands per establishment for all factories in 1918 was 21.27, and in 1921-22, 21.94.

FACTORIES.—CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES, AUSTRALIA, 1918 TO 1921-22.

Year.(a)	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.
1918—								
Number ..	12,240	85,425	2,635	108,782	546	133,842	15,421	328,049
Average per establishment ..	..	6.98	..	41.28	..	245.13	..	21.27
Percentage on total ..	79.37	26.04	17.09	33.16	3.54	40.80	100.00	100.00
1918-19—								
Number ..	12,324	87,604	2,695	111,342	569	141,529	15,588	340,475
Average per establishment ..	..	7.11	..	41.31	..	248.73	..	21.84
Percentage on total ..	79.06	25.73	17.29	32.70	3.65	41.57	100.00	100.00
1919-20—								
Number ..	12,666	92,010	2,975	121,388	650	163,336	16,291	376,734
Average per establishment ..	..	7.26	..	40.80	..	251.29	..	23.13
Percentage on total ..	77.75	24.42	18.26	32.22	3.99	43.36	100.00	100.00
1920-21—								
Number ..	13,396	96,379	3,066	124,307	651	165,953	17,113	386,639
Average per establishment ..	..	7.19	..	40.54	..	254.92	..	22.59
Percentage on total ..	78.28	24.93	17.92	32.15	3.80	42.92	100.00	100.00
1921-22—								
Number ..	14,211	100,301	3,163	127,692	649	167,432	18,023	395,425
Average per establishment ..	..	7.06	..	40.37	..	257.98	..	21.94
Percentage on total ..	78.86	25.37	17.54	32.29	3.60	42.34	100.00	100.00

(a) See general note on first page of this Chapter.

§ 3. Power used in Factories.

1. States, 1921-22.—The following table shows the number of factories using steam, gas, oil, electricity, or water, and the horse-power of engines or motors during 1921-22 :—

FACTORIES.—HORSE-POWER OF ENGINES USED, 1921-22.

State.	Number of Establishments.			Actual Horse-power of Engines Used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity, or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
N.S.W., 1921-22	5,470	886	6,356	201,806	13,211	2,365	122,352	50	339,784
Vict., 1921-22 ..	5,440	1,313	6,753	106,882	19,327	3,009	62,663	..	191,881
Q'land., 1921 ..	1,426	384	1,810	72,357	9,124	1,325	20,424	200	103,480
S. Aust., 1921-22	1,132	300	1,432	37,037	10,163	2,567	12,054	198	62,019
W. Aust., 1921	823	163	986	37,387	5,668	870	10,495	..	54,420
Tas., 1921 ..	568	118	686	4,789	384	227	21,391	19,768	46,559
Australia ..	14,859	3,164	18,023	460,258	57,877	10,363	249,379	20,216	798,093

The preponderance shown by New South Wales is due to the location in that State of the largest number of industries requiring a considerable amount of power. Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less power is utilized.

The number of establishments in Australia during 1921-22 using steam, gas, oil, electricity, or water was 14,859, or 82.44 per cent. of the total; 3,164 establishments, representing 17.56 per cent., used no mechanical power. The total actual horse-power in use was 798,093, distributed in the following proportions :—Steam, 57.67 per cent. ; gas, 7.25 per cent. ; oil, 1.30 per cent. ; electricity, 31.25 per cent. ; and water, 2.53 per cent.

2. Australia, 1918 to 1921-22.—The following table shows the horse-power of engines used in connexion with factories in Australia during each of the last five years :—

FACTORIES.—HORSE-POWER OF ENGINES USED, AUSTRALIA, 1918 TO 1921-22.

Year.(a)	Number of Establishments.			Actual Horse-power of Engines used.					
	Using Machinery worked by Steam, Gas, Oil, Electricity or Water.	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Water.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
1918.. ..	12,250	3,171	15,421	384,794	56,137	8,576	148,732	12,087	610,326
1918-19 ..	12,385	3,203	15,588	392,972	56,437	9,056	159,372	12,109	629,946
1919-20 ..	13,146	3,145	16,291	402,152	58,349	11,872	176,476	11,167	660,016
1920-21 ..	13,943	3,170	17,113	437,851	59,365	11,884	217,916	15,465	742,481
1921-22 ..	14,859	3,164	18,023	460,258	57,877	10,363	249,379	20,216	798,093

(a) See general note on first page of this Chapter.

From this table it appears that the number of manufacturing establishments using power rose from 12,250 in 1918 to 14,859 in 1921-22, an increase of 2,609, or 21.30 per cent. During the same period the number not using power fell from 3,171 to 3,164, a decrease of 7, or 0.22 per cent. The corresponding increase in the actual horse-power of engines used was 187,767, or 30.77 per cent.

3. **Classes of Industry, States, 1921-22.**—The following table gives a classification of the actual horse-power of engines used in factories of different descriptions in each State during 1921-22 :—

FACTORIES.—HORSE-POWER OF ENGINES USED IN EACH CLASS, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	9,176	9,186	1,729	2,134	704	510	23,439
II. Treating oils and fats, animal, vegetable, etc. . .	1,816	654	188	238	123	43	3,062
III. Processes in stone, clay, glass, etc. . .	23,797	8,543	1,640	4,052	2,512	487	41,031
IV. Working in wood . .	19,491	15,031	10,109	2,510	8,701	2,835	58,677
V. Metal works, machinery, etc. . .	77,661	19,172	10,717	9,426	3,977	14,737	135,690
VI. Connected with food and drink, etc. . .	35,827	34,655	48,189	9,251	6,576	2,275	136,773
VII. Clothing and textile fabrics, etc. . .	8,607	16,047	1,934	1,055	351	457	28,451
VIII. Books, paper, printing, and engraving . .	9,978	7,611	1,644	1,190	716	253	21,392
IX. Musical instruments, etc. . .	333	241	..	16	..	..	590
X. Arms and explosives . .	775	912	..	4	..	..	1,691
XI. Vehicles and fittings, saddlery and harness, etc. . .	2,680	2,099	583	1,073	338	217	6,990
XII. Ship and boat building and repairing . .	9,416	1,703	125	546	51	38	11,879
XIII. Furniture, bedding, and upholstery . .	3,032	2,668	1,162	1,173	598	290	8,923
XIV. Drugs, chemicals, and by-products . .	3,386	4,081	24	2,691	1,132	72	11,386
XV. Surgical and other scientific instruments . .	82	56	11	14	16	..	179
XVI. Jewellery, timepieces, and plated ware . .	361	428	35	87	23	11	945
XVII. Heat, light, and power . .	131,748	61,324	25,251	26,288	28,484	24,304	297,409
XVIII. Leatherware, n.e.i. . .	209	418	20	3	(a)	1	651
XIX. Minor wares, n.e.i. . .	1,409	7,052	59	268	(b) 118	29	8,935
Total . .	339,784	191,881	103,430	62,019	54,420	46,559	798,093

(a) Included with Class XIX.

(b) Includes Class XVIII.

4. **Classes of Industry, Australia, 1918 to 1921-22.**—The following table shows a similar classification of the actual horse-power of engines used in manufacturing industries in Australia during the years 1918 to 1921-22 inclusive :—

FACTORIES.—HORSE-POWER OF ENGINES USED, AUSTRALIA, 1918 TO 1921-22.

Class of Industry.	1918.	1918-19. (a)	1919-20. (a)	1920-21. (a)	1921-22. (a)
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	17,842	18,832	21,005	22,475	23,439
II. Treating oils and fats, animal, vegetable, etc. . .	2,282	2,701	3,109	3,093	3,062
III. Processes in stone, clay, glass, etc. . .	26,383	27,449	31,302	38,290	41,031
IV. Working in wood . .	47,560	48,499	53,656	60,363	58,677
V. Metal works, machinery, etc. . .	94,434	99,681	106,792	122,744	135,690
VI. Connected with food and drink, etc. . .	105,390	110,267	120,408	124,550	136,773
VII. Clothing and textile fabrics, etc. . .	18,362	19,428	22,014	24,342	28,451
VIII. Books, paper, printing, and engraving . .	16,225	16,246	17,444	18,201	21,392
IX. Musical instruments, etc. . .	664	501	540	704	590
X. Arms and explosives . .	1,547	1,725	2,192	1,446	1,691
XI. Vehicles and fittings, saddlery and harness, etc. . .	4,851	5,292	5,770	6,410	6,990
XII. Ship and boat building and repairing . .	5,310	6,239	6,860	10,076	11,879
XIII. Furniture, bedding, and upholstery . .	6,576	3,691	7,667	8,227	8,923
XIV. Drugs, chemicals, and by-products . .	8,102	3,179	9,631	10,332	11,386
XV. Surgical and other scientific instruments . .	120	124	145	156	179
XVI. Jewellery, timepieces, and plated ware . .	635	672	839	885	945
XVII. Heat, light, and power . .	245,767	249,199	241,893	280,589	297,409
XVIII. Leatherware, n.e.i. . .	512	599	571	616	651
XIX. Minor wares, n.e.i. . .	7,764	7,622	8,178	8,977	8,935
Total . .	610,326	629,946	660,016	742,481	798,093

(a) See general note on first page of this Chapter.

The actual horse-power of engines used increased in every branch of industry during the last four years. The industries using the greatest amount of power were Class XVII. Heat, light, and power; Class VI. Connected with food and drink; and Class V. Metal works, machinery, etc. These three classes, which together accounted for 71.40 per cent. of the total power used in 1921–22, increased their horse-power from 445,591 to 569,872 during the four years under review, and are mainly responsible for the development of mechanical power in factories since 1918.

§ 4. Employment in Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his own business is counted as an employee, and all “outworkers” (see sub-section 5 (ii) hereinafter) are also included. The individuals embraced may be classed under the following heads:—(i) Working proprietors; (ii) managers and overseers; (iii) accountants and clerks; (iv) engine-drivers and firemen; (v) skilled and unskilled workers in the factories, mills, or workshops; (vi) carters and messengers; and (vii) others.

The following table shows, for each year from 1918 to 1921–22 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage of the numbers employed in each State on the total numbers employed in Australia; and (c) the numbers employed per ten thousand of the mean population in each State and Australia:—

FACTORIES.—EMPLOYMENT, 1918 TO 1921–22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
AVERAGE NUMBER.							
1918 ..	120,554	118,241	40,990	26,634	12,917	8,713	328,049
1918–19 ..	127,591	122,349	40,990	27,915	12,917	8,713	340,475
1919–20 ..	144,454	136,522	40,891	29,442	15,409	10,016	376,734
1920–21 ..	145,011	140,743	43,196	30,430	17,034	10,225	386,639
1921–22 ..	148,876	144,876	42,248	31,171	18,127	10,127	395,425

PERCENTAGE ON AUSTRALIAN TOTAL.

	%	%	%	%	%	%	%
1918 ..	36.75	36.04	12.49	8.12	3.94	2.66	100.00
1918–19 ..	37.48	35.93	12.04	8.20	3.79	2.56	100.00
1919–20 ..	38.34	36.24	10.85	7.82	4.09	2.66	100.00
1920–21 ..	37.51	36.40	11.17	7.87	4.41	2.64	100.00
1921–22 ..	37.65	36.64	10.69	7.88	4.58	2.56	100.00

PER 10,000 OF MEAN POPULATION.

1918 ..	628	834	586	596	420	439	657
1918–19 ..	650	851	586	610	420	439	672
1919–20 ..	709	908	564	611	482	488	714
1920–21 ..	693	921	578	620	517	486	715
1921–22 ..	699	934	553	620	544	475	719

(a) See general note on first page of this Chapter.

2. Rates of Increase, 1917 to 1921-22.—The following table shows the percentage of increase or decrease on the average number of persons employed for the preceding year in each of the years from 1918 to 1921-22. The figures for the earlier years are somewhat vitiated by the change in dates of collecting the statistics in New South Wales, Victoria, and South Australia :—

FACTORY EMPLOYEES.—PERCENTAGE OF INCREASE, 1918 TO 1921-22.

Years.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	%	%	%	%	%	%	%
1917-18	2.17	1.09	1.35	2.40	6.16	7.85	1.98
1918-1918-19 ..	5.84	3.47	1.35	4.81	6.16	7.85	3.79
1918-19-1919-20..	13.22	11.58	-0.24	5.47	19.29	14.95	10.65
1919-20-1920-21..	0.39	3.39	5.64	0.36	10.55	2.09	2.63
1920-21-1921-22..	2.67	2.94	-2.20	2.44	6.42	-0.96	2.27

NOTE.—The minus sign indicates decrease.

(a) See general note on first page of this Chapter.

3. Employees in Classes of Industry, Australia, 1918 to 1921-22.—The following table gives the average numbers of persons employed in factories under each group in Australia during the years 1918 to 1921-22 inclusive :—

FACTORY EMPLOYEES.—CLASSES, AUSTRALIA, 1918 TO 1921-22.

Class of Industry.	1918.	1918-19. (a)	1919-20. (a)	1920-21. (a)	1921-22. (a)
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	9,984	10,775	12,040	10,494	10,925
II. Treating oils and fats, animal, vegetable, etc. ..	2,726	2,604	3,075	2,848	3,103
III. Processes in stone, clay, glass, etc. ..	12,575	13,761	16,271	18,311	16,974
IV. Working in wood ..	24,112	25,825	29,865	31,942	32,393
V. Metal works, machinery, etc. ..	60,392	62,679	70,025	80,550	76,798
VI. Connected with food and drink, etc. ..	56,297	59,891	61,757	57,599	59,252
VII. Clothing and textile fabrics, etc. ..	82,002	81,441	89,424	88,577	97,194
VIII. Books, paper, printing and engraving ..	25,054	25,000	26,826	27,522	28,673
IX. Musical Instruments, etc. ..	677	714	902	1,065	1,154
X. Arms and explosives ..	2,225	1,986	1,662	1,504	1,372
XI. Vehicles and fittings, saddlery and harness, etc. ..	12,672	13,630	15,525	16,334	16,808
XII. Ship and boat building and repairing ..	4,569	6,119	8,343	6,702	7,035
XIII. Furniture, bedding, and upholstery ..	9,542	9,827	11,317	11,827	11,475
XIV. Drugs, chemicals, and by-products ..	5,564	5,861	6,436	6,805	6,933
XV. Surgical and other scientific instruments ..	415	453	495	548	570
XVI. Jewellery, timepieces, and plated ware ..	2,119	2,345	2,719	2,707	2,503
XVII. Heat, light, and power ..	10,714	10,912	11,991	12,770	13,431
XVIII. Leatherware, n.e.i. ..	1,647	1,799	2,233	2,191	2,414
XIX. Minor wares, n.e.i. ..	4,763	4,853	5,828	6,343	6,418
Total	328,049	340,475	376,734	386,639	395,425

(a) See general note on first page of this Chapter.

The number of persons employed in factories has, in common with the number of establishments; increased annually since 1918. During the last four years the average annual increases in the number of factories was 651, and of employees 16,844.

4. Employees in Classes of Industry, States, 1921–22.—The following table shows a similar classification of employees in manufacturing industries in each State during 1921–22 :—

FACTORY EMPLOYEES.—CLASSES, STATES, 1921–22.

Class of Industry.	N.S.W. 1921–22.	Vic. 1921–22	Q'land. 1921.	S.A. 1921–22	W.A. 1921.	Tas. 1921.	Aus- tralia.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	4,182	4,329	741	968	340	365	10,925
II. Treating oils and fats, animal, vegetable, etc.	1,686	880	161	238	105	33	3,103
III. Processes in stone, clay, glass, etc.	7,610	5,391	838	1,876	976	283	16,974
IV. Working in wood	9,026	9,537	4,827	1,474	5,411	2,118	32,393
V. Metal works, machinery, etc.	34,263	23,089	6,641	8,193	3,000	1,612	76,798
VI. Connected with food and drink, etc.	19,140	17,974	14,522	3,996	2,084	1,536	59,252
VII. Clothing and textile fabrics, etc.	32,036	48,844	6,887	5,506	2,341	1,580	97,194
VIII. Books, paper, printing and engraving	11,282	10,151	3,093	2,644	1,244	859	28,673
IX. Musical instruments, etc.	724	390	..	40	..	..	1,154
X. Arms and explosives	612	756	..	4	..	..	1,372
XI. Vehicles and fittings, saddlery, and harness, etc.	5,617	6,173	1,306	2,375	750	587	16,808
XII. Ship and boat building and repairing	5,616	684	104	521	35	75	7,035
XIII. Furniture, bedding, and upholstery	4,352	3,709	1,357	1,047	595	415	11,475
XIV. Drugs, chemicals, and by-products	2,809	2,558	113	891	529	33	6,933
XV. Surgical and other scientific instruments	198	203	86	47	36	..	570
XVI. Jewellery, timepieces, & plated ware	824	1,183	153	219	80	44	2,503
XVII. Heat, light, and power	5,076	5,090	1,082	1,292	361	530	13,431
XVIII. Leatherware, n.e.i.	1,113	1,065	131	92	(a)	13	2,414
XIX. Minor wares, n.e.i.	2,710	2,870	206	348	(b) 240	44	6,418
Total	148,876	144,876	42,248	31,171	18,127	10,127	395,425

(a) Included in Class XIX.

(b) Includes Class XVIII.

The largest number employed in any particular class in Australia during 1921–22 was in Class VII., in which there were 97,194 employees, or 24.58 per cent. of the total in all classes. The class affording employment to the smallest number of hands was Class XV., in which there were 570 hands, or 0.14 per cent of the total. Classes VI., VII., and VIII. include those industries in which female labour is largely employed. (See § 5, 5 hereof.)

5. Employees According to Nature of Employment.—(i) *General*. In the following table the average numbers of persons employed in each State during 1921–22 are classified according to the nature of their employment :—

FACTORY EMPLOYEES.—NATURE OF EMPLOYMENT, 1921–22.

State.	Average Number of Persons Employed.						Total.
	Working Pro-prietors.	Managers and Overseers.	Account-ants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop. (a)	Carters, Messen-gers and Others.	
N.S. Wales, 1921–22	5,043	5,511	6,953	3,078	126,146	2,145	148,876
Victoria, 1921–22 ..	6,904	4,454	6,307	2,156	121,074	3,981	144,876
Queensland, 1921 ..	1,498	1,763	2,127	1,909	32,413	2,538	42,248
S. Australia, 1921–22	1,278	1,076	1,688	563	25,887	679	31,171
W. Australia, 1921	483	947	749	424	14,885	639	18,127
Tasmania, 1921 ..	550	438	583	321	7,919	316	10,127
Australia ..	15,756	14,189	18,407	8,451	328,324	10,298	395,425

(a) Including outworkers.

(ii) *Outworkers.* The term "outworker" or "homeworker" has acquired a special meaning in connexion with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees' own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1918 to 1921-22 inclusive :—

FACTORIES.—OUTWORKERS^(a), 1918 TO 1921-22.

Year. ^(b)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
1918	637	1,406	30	25	4	20	2,122
1918-1919 ..	582	1,022	30	57	4	20	1,715
1919-1920 ..	733	1,492	19	50	8	28	2,330
1920-1921 ..	471	1,151	41	68	14	45	1,790
1921-1922 ..	618	1,476	26	59	8	48	2,235

(a) In all tables relating to number of hands employed in factories, outworkers are included.

(b) See general note on first page of this Chapter.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Records of out-work, specifying the names and remuneration of workers, and stating the places where the work is done, must be kept by factory proprietors. Fuller information regarding the operation of the Factories Acts will be found in the Chapter dealing with "Labour, Wages, and Prices."

§ 5. Sex Distribution in Factories.

1. **Employment of Females.**—In all the States the employment of female labour in factories is regulated by Acts of Parliament. More extended reference to this matter will be found in the Chapter dealing with "Labour, Wages, and Prices."

2. **Distribution of Employees according to Sex.**—(i) *General.* In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is one to two. In South Australia the ratio at the latest date was one female employed to every four males, in Queensland and Tasmania about one to five, and in Western Australia one to six. The ratio for Australia was less than one to three. The employment of women is, however, mainly confined to a few trades.

Increasing activity in the clothing and textile industries is the principal cause of the growth in female employment. Certain occupations are regarded as specially suitable for women, such as clothing and textile manufacture, preparation of food, book-binding, and lighter work, such as wrapping and packing connected with other industries. In common also with commercial establishments, a considerable number of factories employ women as clerks and typists.

(ii) *Average Number of Males and Females Employed, 1918 to 1921-22.* The following table shows the average number of male and female employees in factories in each State from 1918 to 1921-22 :—

FACTORIES.—MALES AND FEMALES EMPLOYED, 1918 TO 1921-22.

State.	1918.	1918-19.(a)	1919-20.(a)	1920-21.(a)	1921-22.(a)
MALES.					
New South Wales ..	90,025	96,884	109,836	112,187	112,362
Victoria.. ..	76,654	81,357	92,101	96,379	97,789
Queensland ..	33,597	33,597	33,851	36,011	35,050
South Australia ..	21,325	22,372	23,434	24,548	25,006
Western Australia ..	10,497	10,497	12,789	14,329	15,514
Tasmania ..	7,356	7,356	8,503	8,746	8,525
Australia	239,454	252,063	280,514	292,200	294,246
FEMALES.					
New South Wales ..	30,529	30,707	34,618	32,824	36,514
Victoria.. ..	41,587	40,992	44,421	44,364	47,087
Queensland ..	7,393	7,393	7,040	7,185	7,198
South Australia ..	5,309	5,543	6,008	5,882	6,165
Western Australia ..	2,420	2,420	2,620	2,705	2,613
Tasmania ..	1,357	1,357	1,513	1,479	1,602
Australia	88,595	88,412	96,220	94,439	101,179

(a) See general note on first page of this Chapter.

During the years specified in the above table there has been an increase in the number of male factory employees in Australia of 54,792, or an annual average of 13,698, whilst the number of female employees increased by 12,584, or an annual average of 3,146.

(iii) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1918 to 1921-22.* The following table shows the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1918 to 1921-22 :—

MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1918 TO 1921-22.

State.	1918.	1918-19.(a)	1919-20.(a)	1920-21.(a)	1921-22.(a)
MALES.					
New South Wales ..	938	984	1,054	1,051	1,037
Victoria.. ..	1,142	1,189	1,245	1,279	1,279
Queensland ..	931	931	895	910	869
South Australia ..	998	1,018	975	1,001	992
Western Australia ..	664	664	761	814	875
Tasmania ..	754	754	851	821	792
Australia	971	1,004	1,048	1,063	1,053

(a) See general note on first page of this Chapter.

MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY—*continued.*

State.	1918.	1918-19.(a)	1919-20.(a)	1920-21.(a)	1921-22.(a)
FEMALES.					
New South Wales ..	318	314	330	321	350
Victoria	557	544	582	573	599
Queensland	219	219	203	204	199
South Australia ..	228	233	249	239	246
Western Australia ..	161	161	173	176	168
Tasmania	135	135	148	142	152
Australia	350	345	370	356	374

(a) See general note on first page of this Chapter.

3. Rate of Variation for each Sex.—The percentages of annual increase or decrease during the years 1917-18 to 1921-22 in the average number of males and females employed in factories are shown below :—

PERCENTAGES OF ANNUAL INCREASE, MALE AND FEMALE FACTORY EMPLOYEES, 1917 TO 1921-22.

State.	1917-18.	1918-1918-19. (a)	1918-19— 1919-20.(a)	1919-20— 1920-21.(a)	1920-21— 1921-22.(a)
MALES.					
New South Wales ..	% 1.25	% 7.62	% 13.37	% 2.14	% 0.16
Victoria	2.31	6.14	13.21	4.64	1.46
Queensland	2.55	(b) 2.55	0.76	6.38	-2.67
South Australia ..	2.53	4.91	4.75	4.75	1.87
Western Australia ..	8.17	(b) 8.17	21.83	12.04	8.27
Tasmania	7.23	(b) 7.23	15.59	2.86	-2.53
Total	2.35	5.27	11.29	4.17	0.70

FEMALES.

New South Wales ..	4.96	0.58	12.74	-5.18	11.24
Victoria	-1.09	-1.43	8.37	-0.13	6.14
Queensland	-3.77	(b) -3.77	-4.77	2.06	0.18
South Australia ..	1.86	4.41	8.39	-2.10	4.81
Western Australia ..	-1.79	(b) -1.79	8.26	3.24	3.40
Tasmania	11.32	(b) 11.32	11.50	-2.25	8.32
Total	1.01	-0.21	8.83	-1.85	7.14

NOTE.—The minus sign indicates decrease.

(a) See general note on first page of this Chapter.

(b) Twelve months ended 31st December, 1918.

It will be seen that by far the largest proportion of females are engaged in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the relation of their number to that of the males so employed, are shown in the following table:—

FEMALES EMPLOYED IN EACH INDUSTRY IN CLASS VII. DURING 1921-22.

Industry.	New South Wales. 1921-22.			Victoria. 1921-22.			Other States.		
	Males.	Females	Femi- ninity. (a)	Males.	Females	Femi- ninity. (a)	Males.	Females	Femi- ninity. (a)
Woollen and tweed mills	689	881	12.31	1,702	2,054	9.37	322	453	16.90
Boots and shoes ..	3,796	2,144	-27.98	6,849	4,865	-16.94	1,729	1,007	-26.39
Slop clothing	2,575	8,553	53.72	2,131	7,290	54.76	1,739	5,328	50.79
Clothing (tailoring)									
Dressmaking and milli- nery ..	116	4,074	94.46	408	8,935	91.27	26	3,013	98.35
Dyeworks and cleaning ..	175	129	-15.13	134	110	-9.84	65	44	-19.27
Furriers ..	61	109	28.24	143	240	25.33	2	4	33.33
Hats and caps ..	521	804	21.36	712	907	12.04	64	91	17.42
Waterproof and oilskin	36	71	32.71	52	118	38.82	2	2	..
Shirts, ties, and scarves	282	3,476	84.99	412	5,759	86.65	106	1,698	88.25
Hosiery and knitted goods ..	518	1,994	58.76	663	3,761	70.03	1	6	71.43
Rope and cordage ..	421	51	-78.39	655	466	-16.86	210	145	-18.31
Tents and tarpaulins ..	199	361	28.93	99	73	-15.12	109	66	-24.57
Other ..	..	..	..	56	250	63.40	27	55	34.15
Total, Class VII. ..	9,389	22,647	41.38	14,016	34,828	42.61	4,402	11,912	46.03

NOTE.—The minus sign denotes excess of males over females.

(a) Excess of females over males per 100 of both sexes combined.

§ 6. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of Australia is regulated by Acts of Parliament in a similar manner to the employment of female labour. Reference to the legislation regarding the employment of child labour in factories will be found in the Chapter dealing with “Labour, Wages, and Prices.” The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed, 1918 to 1921-22.**—In the statistical compilations of the various States the term “child” may be taken to denote any person

under sixteen years of age. The following table shows the average number of children of each sex employed in manufacturing industries in each State during the years 1918 to 1921-22 :—

CHILDREN EMPLOYED IN FACTORIES, 1918 TO 1921-22.

State.	1918.	1918-19.(a)	1919-20.(a)	1920-21.(a)	1921-22.(a)
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MALES.

New South Wales ..	2,584	2,586	3,824	3,673	3,911
Victoria ..	3,195	3,137	3,721	3,715	3,780
Queensland ..	1,171	1,171	1,214	1,266	1,077
South Australia ..	779	834	866	991	996
Western Australia ..	407	407	447	448	401
Tasmania ..	244	244	327	315	287
Australia ..	8,380	8,379	10,399	10,408	10,452

FEMALES.

New South Wales ..	2,492	2,561	3,764	3,610	4,150
Victoria ..	2,447	2,389	2,872	2,798	3,120
Queensland ..	711	711	645	738	774
South Australia ..	567	545	765	679	714
Western Australia ..	307	307	307	311	235
Tasmania ..	105	105	186	193	135
Australia ..	6,629	6,618	8,539	8,329	9,128

TOTAL.

New South Wales ..	5,076	5,147	7,588	7,283	8,061
Victoria ..	5,642	5,526	6,593	6,513	6,900
Queensland ..	1,882	1,882	1,859	2,004	1,851
South Australia ..	1,346	1,379	1,631	1,670	1,710
Western Australia ..	714	714	754	759	636
Tasmania ..	349	349	513	508	422
Australia ..	15,009	14,997	18,938	18,737	19,580

(a) See general note on first page of this Chapter.

3. **Percentage of Children on Total Number of Employees.**—The foregoing table shows a general increase in the number of children employed in factories during the past four years. This increase is more marked among the females than the males, the respective gains being 2,499 and 2,072. Examined in conjunction with the total number of persons employed the percentage of children increased very little since 1918 :—

**PERCENTAGE OF CHILDREN ON TOTAL NUMBER OF FACTORY EMPLOYEES,
1918 TO 1921-22.**

State.	1918.	1918-19.(a)	1919-20.(a)	1920-21.(a)	1921-22.(a)
	%	%	%	%	%
New South Wales ..	4.21	4.03	5.25	5.02	5.41
Victoria ..	4.77	4.52	4.83	4.63	4.76
Queensland ..	4.59	4.59	4.55	4.64	4.38
South Australia ..	5.05	4.94	5.54	5.49	5.49
Western Australia ..	5.53	5.53	4.89	4.46	3.51
Tasmania ..	4.01	4.01	5.12	4.97	4.17
Australia ..	4.58	4.40	5.03	4.85	4.95

(a) See general note on first page of this Chapter.

4. Industries Employing Child Labour.—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the next table, which shows the average number of children of each sex employed during 1921-22 in the several industries indicated.

CHILDREN EMPLOYED.—VARIOUS INDUSTRIES, 1921-22.

Class.	Industry.	N.S.W. 1921-22.		Victoria. 1921-22.		Q'land. 1921.		S. Aust. 1921-22.		W. Aust. 1921.		Tas. 1921.		Australia.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery, and earthenware ..	172	..	73	9	16	..	25	..	7	1	15	..	308	10
IV.	Joinery, boxes, cases, etc.	86	..	156	..	26	1	23	..	12	..	11	..	314	1
"	Saw mills ..	65	2	19	..	47	5	6	..	17	..	23	..	177	7
V.	Engineering, ironworks, and foundries ..	349	20	400	1	78	1	85	..	52	..	11	..	975	22
"	Galvanized ironworking and tinsmithing	162	15	175	23	41	..	66	..	..	..	2	..	446	38
"	Railway carriage, railway and tramway workshops ..	37	3	124	..	3	..	70	..	8	..	3	..	245	3
VI.	Meat & fish preserving	7	..	11	1	52	..	..	..	..	..	..	..	70	1
"	Biscuits ..	259	164	73	45	11	12	11	13	19	6	11	5	384	245
"	Confectionery ..	70	173	48	52	35	66	10	42	5	13	2	1	170	347
"	Jams, pickles, sauces, etc.	19	27	45	40	6	7	23	12	6	7	47	11	146	104
"	Tobacco, cigars, etc. ..	63	103	112	15	..	3	2	1	3	2	..	..	180	124
VII.	Woollen, cotton, and tweed mills ..	54	97	190	194	5	35	13	9	..	..	2	10	264	345
"	Boots and shoes ..	217	320	353	411	42	81	45	45	17	22	13	18	687	897
"	Clothing (tailoring and slop) ..	132	766	85	356	35	202	16	192	10	50	7	29	285	1,595
"	Dressmaking and millinery ..	6	540	14	630	..	129	..	142	1	56	1	38	22	1,535
"	Hats and caps ..	41	119	37	61	1	6	3	5	..	..	..	..	82	191
"	Shirts, ties, scarves, etc.	18	514	18	378	8	123	2	88	..	32	..	9	46	1,144
VIII.	Electrotyping, printing and binding ..	399	212	371	112	172	33	59	30	60	13	34	7	1,095	407
"	Paper making, paper boxes, etc. ..	76	181	31	71	4	16	19	57	2	5	..	..	132	330
XI.	Coach and wagon building ..	65	..	84	..	23	..	26	..	9	..	22	..	229	..
"	Cycles and motors ..	102	9	137	..	23	1	82	2	23	..	13	..	380	12
XIII.	Billiard tables, cabinet making and furniture	113	2	155	..	61	4	43	..	15	..	31	2	418	8
XIV.	Chemicals, drugs, and medicines ..	65	91	18	34	..	6	6	27	3	4	..	..	92	162

5. Apprenticeship.—In all the States Acts are in force for the regulation of the age at which children may be employed in gainful occupations. Legislative provision is also made for the regulation of apprenticeship under the various State Factories Acts or Arbitration Acts. These Acts, while laying down general principles, leave to the wages tribunals the actual determination of the conditions under which apprentices may be employed. The subject is referred to at greater length in the Chapter dealing with "Labour, Wages, and Prices."

§ 7. Salaries and Wages Paid and Value of Production.

[NOTE.]—In all tables relating to Salaries and Wages paid in Factories the amounts given are exclusive of all sums drawn by working proprietors.

1. **General.**—The importance of the manufacturing industries of Australia is indicated by the fact that the total value of the output for 1921–22 was £320,331,765, of which amount the sum of £190,410,265 represents the value of the raw materials used. The difference between these two amounts, viz., £129,921,500, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1921–22 was £68,050,861.

2. **Salaries and Wages Paid.**—(i) *Total Amount, 1921–22.* The total amount of salaries and wages paid during the year 1921–22 in various classes of factories in Australia is shown in the following table :—

SALARIES AND WAGES PAID IN FACTORIES, 1921–22.

Class of Industry.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	858,659	770,203	122,973	155,654	47,927	36,615	1,992,031
II. Treating oils and fats, animal, vegetable, etc.	279,631	169,320	27,470	44,108	15,737	5,406	541,672
III. Processes in stone, clay, glass, etc.	1,578,040	1,040,047	145,408	376,808	179,237	51,600	3,371,140
IV. Working in wood	1,622,924	1,819,745	816,109	281,934	1,151,052	344,740	6,036,504
V. Metal works, machinery, etc.	7,604,653	4,768,964	1,347,881	1,657,937	633,285	297,773	16,310,493
VI. Connected with food and drink, etc.	3,303,147	3,237,705	2,658,609	651,090	377,641	199,963	10,428,155
VII. Clothing and textile fabrics, etc.	3,833,428	5,797,914	746,710	574,998	261,959	152,693	11,367,702
VIII. Books, paper, printing, and engraving	2,051,368	1,844,474	570,765	339,310	249,867	153,155	5,208,939
IX. Musical instruments, etc.	160,195	78,742	..	5,122	..	..	244,059
X. Arms and explosives	154,641	129,785	..	358	..	..	284,784
XI. Vehicles and fittings, saddlery and harness, etc.	914,542	985,592	194,931	382,938	117,351	77,260	2,672,614
XII. Ship and boat building and repairing	1,360,333	164,957	16,160	134,314	5,498	13,276	1,694,538
XIII. Furniture, bedding, and upholstery	752,327	573,160	220,197	166,101	113,386	59,660	1,884,831
XIV. Drugs, chemicals, and by-products	493,153	459,866	13,705	161,038	100,860	3,826	1,232,448
XV. Surgical and other scientific instruments	34,221	27,811	13,708	6,898	6,012	..	88,650
XVI. Jewellery, time-pieces, and plated ware	148,966	181,633	26,735	30,483	11,926	4,845	404,588
XVII. Heat, light & power	1,124,166	1,162,412	260,353	286,059	84,210	97,070	3,014,270
XVIII. Leatherware, n.e.i.	152,152	149,677	14,184	9,993	(a)	1,056	327,062
XIX. Minor wares, n.e.i.	356,696	484,488	21,875	48,784	(b)30,602	3,936	946,381
Total	26,783,242	23,846,495	7,217,773	5,313,927	3,386,550	1,502,874	68,050,861

(a) Included in Class XIX.

(b) Includes Class XVIII.

The maximum amount of salaries and wages paid in any particular class during 1921–22 was in Class V., the amount being £16,310,493, or 23.97 per cent. on the total amount; the minimum amount was in Class XV., £88,650, or 0.13 per cent. on the total. The State in which the largest amount was paid was New South Wales.

(ii) *Totals and Averages, 1918 to 1921-22.* The following statement shows the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1918 to 1921-22. The figures are exclusive of working proprietors and of the amounts drawn from the business by them :—

SALARIES AND WAGES PAID IN FACTORIES.—TOTAL AND AVERAGE PER ANNUM PER EMPLOYEE, 1918 TO 1921-22.

Year. (a)	Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
		£	£	£	£	£	£	£
1918 ..	Total amount paid ..	14,701,255	12,502,601	5,121,188	3,359,354	1,730,896	963,974	38,379,268
	Average per employee	126.18	110.77	129.45	131.94	138.55	115.57	121.75
1918-19	Total amount paid ..	16,957,919	14,080,403	5,121,188	3,651,715	1,730,896	963,974	42,506,095
	Average per employee	137.33	120.47	129.45	136.64	138.55	115.57	129.80
1919-20	Total amount paid ..	21,681,196	17,702,173	5,364,818	3,988,062	2,173,350	1,205,959	52,115,558
	Average per employee	154.87	135.52	135.86	141.63	145.24	126.03	143.65
1920-21	Total amount paid ..	25,618,591	21,377,216	6,718,905	4,866,211	2,870,567	1,480,228	62,931,718
	Average per employee	182.39	159.41	161.12	166.96	173.60	150.86	169.28
1921-22	Total amount paid ..	26,783,242	23,846,495	7,217,773	5,313,927	3,386,550	1,502,874	68,050,861
	Average per employee	186.21	172.84	177.12	177.76	191.94	156.93	179.24

(a) See general note on first page of this Chapter.

In comparing the figures in the preceding table, regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others. In Victoria, for instance, there is a large number of hands employed in Class VII., comprising a heavy percentage of women and children. The highest average wage per employee is paid in Western Australia, where the percentage of males employed is largest.

There has been a continual increase in the average wage paid per employee in each of the States during the period under review. Taking Australia as a whole, during the period 1918 to 1921-22 there has been an increase of 77.31 per cent. in the total amount of wages paid, and 47.22 per cent. in the average paid per employee.

(iii) *Earnings of Males and Females, 1921-22.* The following table shows the approximate amount paid in salaries and wages to males and females in each class of industry in each State during the year 1921-22 :—

SALARIES AND WAGES.—MALE AND FEMALE FACTORY EMPLOYEES, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
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MALES.

	£	£	£	£	£	£	£
I. Treating raw material product of agricultural and pastoral pursuits, etc. ..	839,348	766,817	122,032	154,737	47,862	36,555	1,967,351
II. Treating oils and fats, animal, vegetable, etc. ..	246,019	155,154	26,172	41,334	15,136	4,957	488,772
III. Processes in stone, clay, glass, etc. ..	1,565,916	1,027,575	144,158	375,585	178,026	51,142	3,342,402
IV. Working in wood ..	1,605,453	1,801,621	808,366	278,245	1,150,026	343,428	5,987,139
V. Metal works, machinery, etc. ..	7,536,113	4,720,200	1,340,230	1,647,774	629,673	296,821	16,170,811

SALARIES AND WAGES.—MALE AND FEMALE FACTORY EMPLOYEES,
1921-22—*continued.*

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
MALES— <i>continued.</i>							
VI. Connected with food and drink, etc. . .	£ 2,812,443	£ 2,801,520	£ 2,576,241	£ 603,060	£ 352,067	£ 187,184	£ 9,332,515
VII. Clothing and textile fabrics, etc. . .	1,721,341	2,622,027	325,737	240,889	104,107	73,703	5,087,804
VIII. Books, paper, printing and engraving . .	1,775,578	1,558,766	506,647	291,861	224,976	141,610	4,499,438
IX. Musical Instruments, etc. . .	155,099	76,650	..	5,122	..	..	236,871
X. Arms and explosives	154,184	95,714	..	358	..	..	250,256
XI. Vehicles and fittings, saddlery and harness, etc. . .	894,219	964,616	187,301	373,954	114,501	73,488	2,608,079
XII. Ship and boat building and repairing . .	1,354,676	164,283	16,160	134,314	5,488	13,276	1,688,197
XIII. Furniture, bedding, and upholstery . .	699,699	535,055	211,491	162,031	110,150	57,652	1,776,078
XIV. Drugs, chemicals, and by-products . .	408,392	395,033	8,299	152,745	96,393	3,514	1,064,376
XV. Surgical and other scientific instruments . .	31,175	26,359	13,115	6,471	5,499	..	82,619
XVI. Jewellery, timepieces, and plated ware . .	139,311	168,769	24,901	29,283	11,513	4,793	378,570
XVII. Heat, light, and power	1,116,775	1,092,919	255,200	279,207	84,064	96,162	2,924,327
XVIII. Leatherware, n.e.i.	122,616	112,897	11,048	5,582	(a) 803	803	252,946
XIX. Minor wares, n.e.i. . .	288,209	411,476	19,003	45,060	(b) 25,610	3,653	793,011
Total . .	23,466,566	19,497,451	6,596,101	4,827,612	3,155,091	1,388,741	58,931,562
FEMALES.							
I. Treating raw material product of agricultural and pastoral pursuits, etc. . .	19,311	3,386	941	917	65	60	24,680
II. Treating oils and fats, animal, vegetable, etc. . .	33,612	14,166	1,298	2,774	601	449	52,900
III. Processes in stone, clay, glass, etc. . .	12,124	12,472	1,250	1,223	1,211	458	28,738
IV. Working in wood . .	17,471	18,124	7,743	3,689	1,026	1,312	49,365
V. Metal works, machinery, etc. . .	68,540	48,764	7,651	10,163	3,612	952	139,682
VI. Connected with food and drink, etc. . .	490,704	436,185	82,368	48,030	25,574	12,779	1,095,640
VII. Clothing and textile fabrics, etc. . .	2,112,087	3,175,887	420,973	334,109	157,852	78,990	6,279,898
VIII. Books, paper, printing and engraving . .	275,790	285,708	64,118	47,449	24,891	11,545	709,501
IX. Musical instruments, etc. . .	5,096	2,092	..	..	..	..	7,188
X. Arms and explosives	457	34,071	..	..	..	..	34,528
XI. Vehicles and fittings, saddlery and harness, etc. . .	20,323	20,976	7,630	8,984	2,850	3,772	64,535
XII. Ship and boat building and repairing . .	5,657	674	..	..	10	..	6,341
XIII. Furniture, bedding, and upholstery . .	52,628	38,105	8,706	4,070	3,236	2,008	108,753
XIV. Drugs, chemicals, and by-products . .	84,761	64,833	5,406	8,293	4,467	312	168,072
XV. Surgical and other scientific instruments . .	3,046	1,452	593	427	513	..	6,031
XVI. Jewellery, timepieces, and plated ware . .	9,655	12,864	1,834	1,200	413	52	26,018
XVII. Heat, light, and power	7,391	69,493	5,153	6,852	146	908	89,943
XVIII. Leatherware, n.e.i.	29,536	36,780	3,136	4,411	(a) 253	253	74,116
XIX. Minor wares, n.e.i. . .	68,487	73,012	2,872	3,724	(b) 4,992	283	153,370
Total . .	3,316,676	4,349,044	621,672	486,315	231,459	114,133	9,119,299

(a) Included in Class XIX.

(b) Includes Class XVIII.

(iv) *Total and Average Earnings of Males and Females, 1918 to 1921-22.* Similar information for the last five years is given in the table hereunder:—

**SALARIES AND WAGES.—MALE AND FEMALE FACTORY EMPLOYEES,
1918 TO 1921-22.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
MALES.							
1918. Amount paid ..£	12,848,017	10,141,750	4,710,717	3,087,063	1,578,600	892,743	33,258,890
Per cent. on total ..	87.39	81.12	91.98	91.89	91.20	92.61	86.66
Average per employee £	148.93	141.12	146.19	152.89	156.41	127.75	146.11
1918-19. <i>a</i> Amount paid ..£	14,966,669	11,531,666	4,710,717	3,344,623	1,578,600	892,743	37,025,018
Per cent. on total ..	88.26	81.90	91.98	91.59	91.20	92.61	87.11
Average per employee £	160.82	150.89	146.19	157.55	156.41	127.75	154.25
1919-20. <i>a</i> Amount paid ..£	19,128,348	14,483,166	4,909,725	3,603,180	2,000,474	1,116,679	45,243,572
Per cent. on total ..	88.23	81.82	91.52	90.40	92.05	92.60	86.81
Average per employee £	181.06	166.98	151.09	162.43	161.84	138.51	169.14
1920-21. <i>a</i> Amount paid ..£	22,766,216	17,668,917	6,168,744	4,430,269	2,647,957	1,376,822	55,058,925
Per cent. on total ..	88.87	82.65	91.81	91.04	92.25	93.01	87.49
Average per employee £	210.99	195.63	178.49	190.05	191.16	165.07	197.85
1921-22. <i>a</i> Amount paid ..£	23,466,566	19,497,451	6,596,101	4,827,612	3,155,091	1,388,741	58,931,562
Per cent. on total ..	87.62	81.76	91.39	90.85	93.17	92.41	86.60
Average per employee £	218.03	213.07	196.28	203.02	209.65	173.57	210.79
FEMALES.							
1918. Amount paid ..£	1,853,238	2,360,851	410,471	272,291	152,296	71,231	5,120,378
Per cent. on total ..	12.61	18.88	8.02	8.11	8.80	7.39	13.34
Average per employee £	61.27	57.57	55.95	51.67	63.46	52.65	58.45
1919-20. <i>a</i> Amount paid ..£	1,991,250	2,548,737	410,471	307,092	152,296	71,231	5,481,077
Per cent. on total ..	11.74	18.10	8.02	8.41	8.80	7.39	12.89
Average per employee £	65.46	63.00	55.95	55.88	63.46	52.65	62.67
1919-20. <i>a</i> Amount paid ..£	2,552,848	3,219,007	455,093	382,882	172,876	89,280	6,871,986
Per cent. on total ..	11.77	18.18	8.48	9.60	7.95	7.40	13.19
Average per employee £	74.33	73.35	65.07	64.20	66.41	59.24	72.11
1920-21. <i>a</i> Amount paid ..£	2,852,375	3,708,299	550,161	435,942	222,610	103,406	7,872,793
Per cent. on total ..	11.13	17.35	8.19	8.96	7.75	6.99	12.51
Average per employee £	87.61	84.71	77.04	74.71	82.94	70.30	84.23
1921-22. <i>a</i> Amount paid ..£	3,316,676	4,349,044	621,672	486,315	231,459	114,133	9,119,299
Per cent. on total ..	12.38	18.24	8.61	9.15	6.83	7.59	13.40
Average per employee £	91.62	93.60	87.01	79.54	89.19	72.42	91.11

(a) See general note on first page of this Chapter.

(v) *Managers, Overseers, and Other Employees.* A further analysis of salaries and wages paid is given in the following table, the amounts paid to managers, overseers, etc., being differentiated from those paid to other employees. As previously mentioned, amounts drawn by working proprietors are excluded in all cases.

**SALARIES AND WAGES.—MANAGERS, OVERSEERS, AND OTHER FACTORY
EMPLOYEES, AUSTRALIA, 1921-22.**

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
I. Treating raw material product of agricultural and pastoral pursuits, etc. ..	£ 223,856	£ 9,806	£ 1,743,495	£ 14,874	£ 1,967,351	£ 24,680	£ 1,992,031
II. Treating oils and fats, animal, vegetable, etc. ..	99,131	10,665	389,641	42,235	488,772	52,900	541,672
III. Processes in stone, clay, glass, etc. ..	331,436	16,352	3,010,966	12,386	3,342,402	28,738	3,371,140
IV. Working in wood ..	641,189	38,248	5,345,950	11,117	5,987,139	49,365	6,036,504
V. Metal works, machinery, etc. ..	1,624,503	80,630	14,546,308	59,052	16,170,811	139,682	16,310,493
VI. Connected with food and drink, etc. ..	1,676,032	153,200	7,656,483	942,440	9,332,515	1,095,640	10,428,155
VII. Clothing and textile fabrics, etc. ..	804,664	321,019	4,283,140	5,958,879	5,087,804	6,279,898	11,367,702
VIII. Books, paper, printing and engraving ..	872,726	133,931	3,626,712	575,570	4,499,438	709,501	5,208,939
IX. Musical instruments, etc. ..	23,633	2,893	213,238	4,295	236,871	7,188	244,059
X. Arms and explosives	33,927	1,170	216,329	33,358	250,256	34,528	284,784

**SALARIES AND WAGES.—MANAGERS, OVERSEERS, AND OTHER
FACTORY EMPLOYEES, AUSTRALIA, 1921-22—continued.**

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks.		All Other Employees.		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
XI. Vehicles and fittings, saddlery and harness, etc. . .	261,370	41,837	2,346,709	22,698	2,608,079	64,535	2,672,614
XII. Ship and boat building and repairing . .	175,880	5,449	1,512,317	892	1,688,197	6,341	1,694,538
XIII. Furniture, bedding, and upholstery . .	148,340	20,737	1,627,738	88,016	1,776,078	108,753	1,884,831
XIV. Drugs, chemicals, and by-products . .	238,549	35,414	825,827	132,658	1,064,376	168,072	1,232,448
XV. Surgical and other scientific instruments . .	12,884	2,256	69,735	3,775	82,619	6,031	88,650
XVI. Jewellery, timepieces, and plated ware . .	35,448	9,790	343,122	16,228	378,570	26,018	404,588
XVII. Heat, light, and power . .	580,734	38,941	2,343,593	51,002	2,924,327	89,943	3,014,270
XVIII. Leatherware, n.e.i. . .	41,678	7,613	211,268	66,503	252,946	74,116	327,062
XIX. Minor wares, n.e.i. . .	111,263	14,014	681,748	139,356	793,011	153,370	946,381
Total . .	7,937,243	943,965	50,994,319	8,175,334	58,931,562	9,119,299	68,050,861
Average paid per employee	313.92	129.10	200.54	88.11	210.79	91.11	179.24

3. Value of Fuel and Light Used.—(i) *Total Amount, 1921-22.* The expenditure in factories on fuel and light is of considerable importance; in 1921-22 it amounted to £8,256,381. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £2,345,988; Class VI., Connected with Food, Drink, etc., £1,700,556; Class XVII., Heat, Light, Power, etc., £1,636,934, of which amount £1,441,320 was expended on generating electric light and power; and Class III., £1,021,632. The following table shows the value of fuel and light used in the different classes of industry during 1921-22 :—

VALUE OF FUEL AND LIGHT USED IN FACTORIES, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	126,183	110,294	16,270	20,053	5,978	2,547	281,325
II. Treating oils and fats, animal, vegetable, etc. . .	57,158	46,314	4,487	5,924	2,370	647	116,900
III. Processes in stone, clay, glass, etc. . .	465,043	325,356	26,827	138,478	53,130	12,798	1,021,632
IV. Working in wood . .	51,177	40,642	18,643	7,995	8,824	3,273	130,554
V. Metal works, machinery, etc. . .	1,570,508	321,496	91,313	243,610	38,607	80,454	2,345,988
VI. Connected with food and drink, etc. . .	557,338	553,135	372,502	133,681	61,177	22,723	1,700,556
VII. Clothing and textile fabrics, etc. . .	85,167	204,464	15,684	16,412	4,830	4,366	330,923
VIII. Books, paper, printing, engraving . .	74,978	104,588	21,195	11,552	7,306	3,538	223,157
IX. Musical instruments, etc. . .	2,916	1,444	..	141	..	..	4,501
X. Arms and explosives . .	3,118	16,443	..	13	..	..	19,574
XI. Vehicles and fittings, saddlery and harness, etc. . .	24,617	30,413	4,486	11,979	5,129	2,764	79,388
XII. Ship and boat building and repairing . .	47,572	6,675	260	7,793	86	144	62,530
XIII. Furniture, bedding, and upholstery . .	18,005	16,926	6,633	4,870	2,842	1,251	50,527
XIV. Drugs, chemicals, and by-products . .	38,653	58,714	730	24,838	8,055	235	131,225
XV. Surgical and other scientific instruments . .	735	1,065	408	286	125	..	2,619
XVI. Jewellery, timepieces, and plated ware . .	3,914	6,059	974	1,780	267	213	13,207
XVII. Heat, light, and power . .	834,504	406,170	87,164	167,594	124,949	16,553	1,636,934
XVIII. Leatherware, n.e.i. . .	1,616	4,899	285	238	(a)	9	7,047
XIX. Minor wares, n.e.i. . .	20,528	74,663	363	1,258	(b) 944	38	97,794
Total . .	3,983,730	2,329,760	668,224	798,495	324,619	151,553	8,256,381

(a) Included with Class XIX.

(b) Includes Class XVIII.

(ii) *Total Amount, 1918 to 1921-22.* The following table gives the sums expended on fuel and light during the past five years :—

VALUE OF FUEL AND LIGHT USED IN FACTORIES, 1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
	£	£	£	£	£	£	£
1918	2,060,076	1,248,186	424,099	683,187	211,950	105,392	4,732,890
1918-19	2,298,041	1,457,124	424,099	644,687	211,950	105,392	5,141,293
1919-20	2,710,666	1,723,220	531,612	558,802	222,334	112,555	5,859,189
1920-21	3,608,744	2,184,096	766,590	704,775	273,061	155,222	7,692,488
1921-22	3,983,730	2,329,760	663,224	798,495	324,619	151,553	8,256,381

(a) See general note on first page of this Chapter.

4. *Value of Raw Materials Used.*—(i) *Total Amount, 1921-22.* The value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in Australia during 1921-22 was £190,410,265, which represents 59.44 per cent. of the total value of the finished products. (See next sub-section.) The following table shows the value of the raw materials worked up in various classes of industry in each State :—

VALUE OF RAW MATERIALS USED IN FACTORIES, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	5,759,104	3,783,063	1,517,594	714,549	408,364	255,525	12,438,199
II. Treating oils and fats, animal, vegetable, etc. ..	1,805,006	824,602	123,612	235,349	91,756	12,019	3,092,344
III. Processes in stone, clay, glass, etc. ..	1,264,562	462,436	133,847	298,434	76,525	22,278	2,258,082
IV. Working in wood ..	3,839,940	2,284,663	1,305,952	1,034,865	240,041	159,727	8,865,188
V. Metal works, machinery, etc. ..	17,047,240	6,602,053	1,356,001	3,228,442	814,244	594,669	29,642,649
VI. Connected with food and drink, etc. ..	32,605,295	23,533,580	17,235,915	5,093,712	2,672,407	1,309,913	82,450,822
VII. Clothing and textile fabrics, etc. ..	7,866,213	12,584,591	1,633,666	1,113,081	599,327	238,781	24,035,659
VIII. Books, paper, printing, and engraving ..	3,251,264	2,811,629	616,576	549,927	331,930	145,359	7,706,685
IX. Musical instruments, etc. ..	171,265	98,883	..	5,070	..	..	275,218
X. Arms and explosives ..	39,266	309,887	..	1,147	..	..	350,300
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,023,635	1,076,226	281,998	557,779	141,264	98,081	3,178,933
XII. Ship and boat building and repairing ..	708,142	213,566	16,734	157,930	3,689	5,927	1,105,988
XIII. Furniture, bedding, and upholstery ..	1,269,590	981,472	330,955	203,225	140,582	50,133	2,975,957
XIV. Drugs, chemicals, and by-products ..	2,284,523	1,662,195	29,599	565,039	440,707	25,247	5,007,310
XV. Surgical and other scientific instruments ..	38,596	26,572	9,673	8,278	8,380	..	91,499
XVI. Jewellery, timepieces, and platedware ..	140,821	253,976	20,505	29,003	17,486	2,953	464,744
XVII. Heat, light, and power ..	1,910,124	1,291,568	143,263	188,333	60,429	57,122	3,650,839
XVIII. Leatherware, n.e.i. ..	362,795	396,368	27,859	23,341	(a)	2,539	812,902
XIX. Minor wares, n.e.i. ..	703,015	1,155,231	24,671	80,426	(b) 40,562	3,042	2,006,947
Total ..	82,090,396	60,352,561	24,808,420	14,087,930	6,087,693	2,983,265	190,410,265

(a) Included in Class XIX. (b) Includes Class XVIII.

The largest value of raw materials used was in Class VI., "Connected with Food and Drink, etc.," the total being £82,450,822. The next in order of importance was Class V., "Metal Works, Machinery, etc.," in which raw materials valued at £29,642,649 were used. The minimum value appears in Class XV., "Surgical and other Scientific Instruments," the total being only £91,499.

(ii) *Total Amount, 1918 to 1921-22.* The following table presents particulars of the values of raw materials used in factories during the past five years :—

VALUE OF RAW MATERIALS USED IN FACTORIES, 1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
1918 ..	64,618,261	42,133,636	19,693,043	12,442,803	3,963,470	3,230,188	146,081,401
1918-19 ..	69,737,452	52,098,737	19,693,043	13,759,882	3,963,470	3,230,188	162,482,772
1919-20 ..	81,188,497	65,563,104	19,386,068	12,970,957	5,051,114	3,563,137	187,722,877
1920-21 ..	91,104,505	65,401,425	24,073,200	14,375,430	6,677,414	4,234,308	205,866,282
1921-22 ..	82,090,396	60,352,561	24,808,420	14,087,930	6,087,693	2,983,265	190,410,265

(a) See general note on first page of this Chapter.

5. Total Value of Output. (i) *Total, 1921-22.* The value of the output of new goods manufactured and of repairs effected in factories of various classes in each State during 1921-22 is shown in the following table. The figures given represent not only the increase in value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see sub-section 6 hereof) is the real value of production from manufactories.

TOTAL VALUE OF OUTPUT OF FACTORIES, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	7,457,931	5,319,870	1,793,691	1,008,045	538,273	332,750	16,450,560
II. Treating oils and fats, animal, vegetable, etc. ..	2,613,765	1,372,478	218,505	353,021	128,009	17,345	4,703,123
III. Processes in stone, clay, glass, etc. ..	4,292,519	2,462,840	437,145	1,047,150	342,931	100,767	8,713,352
IV. Working in wood ..	6,224,312	5,233,711	2,651,900	1,540,623	1,661,715	626,214	17,938,475
V. Metal works, machinery, etc. ..	30,013,172	13,919,924	3,061,641	5,812,929	1,593,196	1,141,171	55,542,038
VI. Connected with food and drink, etc. ..	41,633,322	32,511,172	24,890,172	6,860,550	3,563,498	1,918,657	111,377,371
VII. Clothing and textile fabrics, etc. ..	14,136,157	22,988,369	2,917,840	2,031,746	971,208	521,064	43,566,384
VIII. Books, paper, printing, and engraving ..	6,660,834	6,359,164	1,705,553	1,108,344	760,445	376,271	16,970,611
IX. Musical instruments, etc. ..	423,009	209,955	..	13,394	..	..	646,358
X. Arms and explosives ..	270,436	519,760	..	2,020	..	..	792,236
XI. Vehicles and fittings, saddlery and harness, etc. ..	2,392,877	2,619,570	632,363	1,191,125	319,202	211,671	7,363,808
XII. Ship and boat building and repairing ..	2,264,385	429,637	37,772	322,158	10,700	23,959	3,088,611
XIII. Furniture, bedding, and upholstery ..	2,349,631	1,902,929	687,187	444,251	284,960	139,335	5,808,293
XIV. Drugs, chemicals, and by-products ..	3,869,625	2,852,657	66,867	885,271	603,982	33,194	8,311,596
XV. Surgical and other scientific instruments ..	96,552	73,548	32,289	24,583	16,701	..	243,678
XVI. Jewellery, timepieces, and plated ware ..	362,819	554,278	58,417	77,187	32,984	12,108	1,097,793
XVII. Heat, light, and power ..	5,905,834	4,274,975	1,005,118	942,416	379,813	330,017	12,838,173
XVIII. Leatherware, n.e.i. ..	644,992	710,903	52,813	40,946	(a)	3,886	1,453,540
XIX. Minor wares, n.e.i. ..	1,198,873	1,927,441	55,025	149,098	(b) 84,122	8,216	3,422,775
Total ..	132,811,065	106,243,181	40,334,298	23,854,857	11,291,739	5,796,625	320,331,765

(a) Included in Class XIX.

(b) Includes Class XVII.

New South Wales far exceeds the other States in respect of the total value of output, the value being £132,811,065, or 41.46 per cent. on the total for all States. Next in order of value is Victoria, which produced 33.17 per cent.; the value of the output of Queensland was 12.59 per cent.; of South Australia 7.44 per cent.; of Western Australia 3.53 per cent.; and of Tasmania 1.81 per cent. The two most important classes in order of value of output (Classes VI. and V.) are the same as in order of value of raw materials used.

(ii) *Total and Averages, 1918 to 1921-22.* The following statement shows the value of output of factories, value per employee, and value per head of mean population in each State during the five years ended 1921-22 :—

TOTAL VALUE OF OUTPUT OF FACTORIES, 1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
TOTAL.							
	£	£	£	£	£	£	£
1918 ..	96,178,191	67,066,715	30,559,839	19,261,142	7,003,505	5,684,219	225,753,611
1918-19 ..	104,803,018	80,195,677	30,559,839	20,810,630	7,003,505	5,684,219	249,056,888
1919-20 ..	123,213,480	101,475,363	32,452,744	20,454,539	8,723,928	6,216,554	292,536,608
1920-21 ..	137,841,386	106,008,294	39,190,242	22,358,109	11,443,080	7,151,972	323,993,083
1921-22 ..	132,811,065	106,243,181	40,334,298	23,854,857	11,291,739	5,796,625	320,331,765

PER EMPLOYEE.

	£	£	£	£	£	£	£
1918 ..	798	567	746	723	542	652	688
1918-19 ..	821	655	746	745	542	652	731
1919-20 ..	853	743	794	695	566	621	777
1920-21 ..	951	753	907	735	672	699	838
1921-22 ..	892	733	955	765	623	572	810

PER HEAD OF MEAN POPULATION.

	£	£	£	£	£	£	£
1918 ..	50.10	47.32	43.72	43.11	22.75	28.67	45.19
1918-19 ..	53.43	55.79	43.72	45.47	22.75	28.67	49.13
1919-20 ..	60.45	67.50	44.78	42.47	27.30	30.32	55.41
1920-21 ..	65.92	69.37	52.43	45.52	34.72	33.99	59.95
1921-22 ..	62.43	68.50	52.75	47.46	33.88	27.17	58.26

(a) See general note on first page of this Chapter.

6. *Value Added in Process of Manufacture.*—(i) *Total in Classes, 1921-22.* The difference between the figures given in sub-section 5 and the corresponding figures in sub-section 4 represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shows the value added in this manner during 1921-22 in each State for the various classes of factories :—

VALUE ADDED IN PROCESS OF MANUFACTURE, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	£ 1,698,827	£ 1,536,807	£ 276,097	£ 293,496	£ 129,909	£ 77,225	£ 4,012,361
II. Treating oils and fats, animal, vegetable, etc. ..	808,759	547,876	94,893	117,672	36,253	5,326	1,610,779
III. Processes in stone, clay, glass, etc. ..	3,027,957	2,000,404	333,298	748,716	266,406	78,489	6,455,270
IV. Working in wood ..	2,384,372	2,949,048	1,345,948	505,758	1,421,674	466,487	9,073,287
V. Metal works, machinery, etc. ..	12,965,932	7,317,871	1,705,640	2,584,487	778,952	546,502	25,899,384
VI. Connected with food and drink, etc. ..	9,028,027	8,977,592	7,654,257	1,766,838	891,091	608,744	28,926,549
VII. Clothing and textile fabrics, etc. ..	6,269,944	10,403,778	1,284,174	918,665	371,881	282,283	19,530,725
VIII. Books, paper, printing, and engraving ..	3,409,570	3,547,535	1,088,977	558,417	428,515	230,912	9,263,926
IX. Musical instruments, etc. ..	251,744	111,072	..	8,324	..	..	371,140
X. Arms and explosives ..	231,190	209,873	..	873	..	..	441,936
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,369,242	1,543,344	350,365	633,346	177,938	113,640	4,187,875
XII. Ship and boat building and repairing ..	1,556,243	216,071	21,038	164,228	7,011	18,032	1,982,623
XIII. Furniture, bedding, and upholstery ..	1,080,041	921,457	356,232	241,026	144,378	89,202	2,832,336
XIV. Drugs, chemicals, and by-products ..	1,585,102	1,190,462	37,268	320,232	163,275	7,947	3,304,286
XV. Surgical & other scientific instruments ..	57,956	46,976	22,616	16,305	8,321	..	152,174
XVI. Jewellery, timepieces, and plated ware ..	221,998	300,302	37,912	48,184	15,498	9,155	633,049
XVII. Heat, light, and power ..	3,995,710	2,983,407	861,855	754,083	319,384	272,895	9,187,334
XVIII. Leatherware, n.e.i. ..	232,197	314,535	24,954	17,605	(b)	1,347	640,638
XIX. Minor wares, n.e.i. ..	495,858	772,210	30,354	68,672	(a)43,560	5,174	1,415,828
Total ..	50,720,669	45,890,620	15,525,878	9,766,927	5,204,046	2,813,360	129,921,500

(a) Includes Class XVIII.

(b) Included in Class XIX.

(ii) *Totals and Averages, 1918 to 1921-22.* The amount of the value added in each State is in much the same order as in the case of value of output, the six most important classes being VI., V., VII., VIII., XVII., and IV., in the order named. The value added to raw material by process of manufacture and the amount per employee and per head of mean population are shown in the following table for the years 1918 to 1921-22 :—

FACTORIES.—VALUE ADDED IN PROCESS OF MANUFACTURE,
1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
VALUE.							
	£	£	£	£	£	£	£
1918 ..	31,559,930	24,933,079	10,866,796	6,818,339	3,040,035	2,454,031	79,672,210
1918-19 ..	35,065,566	28,096,940	10,866,796	7,050,748	3,040,035	2,454,031	86,574,116
1919-20 ..	42,024,983	35,912,259	13,066,676	7,483,582	3,672,814	2,653,417	104,813,731
1920-21 ..	46,736,881	40,606,869	15,117,042	7,982,679	4,765,666	2,917,664	118,126,801
1921-22 ..	50,720,669	45,890,620	15,525,878	9,766,927	5,204,046	2,813,360	129,921,500

(a) See general note on first page of this Chapter.

FACTORIES.—VALUE ADDED IN PROCESS OF MANUFACTURE, 1918 TO 1921-22—*continued.*

Year (a).	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
PER EMPLOYEE.							
	£	£	£	£	£	£	£
1918.. ..	262	211	265	256	235	282	243
1918-19 ..	275	230	265	253	235	282	254
1919-20 ..	291	263	320	254	238	265	278
1920-21 ..	322	289	350	262	280	285	306
1921-22 ..	341	317	367	313	287	278	329
PER HEAD OF MEAN POPULATION.							
	£	£	£	£	£	£	£
1918.. ..	16.44	17.59	15.55	15.26	9.88	12.38	15.95
1918-19 ..	17.88	19.55	15.55	15.41	9.88	12.38	17.08
1919-20 ..	20.62	23.89	18.03	15.54	11.49	12.94	19.85
1920-21 ..	23.35	26.57	20.22	16.25	14.46	13.86	21.86
1921-22 ..	23.84	29.59	20.30	19.43	15.62	13.19	23.63

(a) See general note on first page of this Chapter.

7. Value of Output and Cost of Production.—As the total value of the output for Australia for 1921-22 was estimated at £320,331,765, there remained, after payment of £190,410,265, the value of the raw materials used, of £68,050,861 for salaries and wages, and of £8,256,381 for fuel, the sum of £53,614,258 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely, and as percentages on the total value of the output for the year 1921-22 :—

FACTORIES.—VALUE OF OUTPUT AND COST OF PRODUCTION, 1921-22.

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure, Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
	£	£	£	£	£
New South Wales, 1921-22	82,090,396	3,983,730	26,783,242	19,953,697	132,811,065
Victoria, 1291-22 ..	60,352,561	2,329,760	23,846,495	19,714,365	106,243,181
Queensland, 1921 ..	24,808,420	668,224	7,217,773	7,639,881	40,334,298
South Australia, 1921-22 ..	14,087,930	798,495	5,313,927	3,654,505	23,854,857
Western Australia, 1921 ..	6,087,693	324,619	3,386,550	1,492,877	11,291,739
Tasmania, 1921 ..	2,983,265	151,553	1,502,874	1,158,933	5,796,625
Australia.. ..	190,410,265	8,256,381	68,050,861	53,614,258	320,331,765

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

	%	%	%	%	%
New South Wales, 1921-22	61.81	3.00	20.17	15.02	100.00
Victoria, 1921-22 ..	56.81	2.19	22.45	18.55	100.00
Queensland, 1921 ..	61.51	1.66	17.89	18.94	100.00
South Australia, 1921-22 ..	59.06	3.35	22.28	15.31	100.00
Western Australia, 1921 ..	53.91	2.87	29.99	13.23	100.00
Tasmania, 1921 ..	51.47	2.61	25.93	19.99	100.00
Australia.. ..	59.44	2.58	21.24	16.74	100.00

§ 8. Value of Land, Buildings, Plant, and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in Australia, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole of Australia the total value of land and buildings and plant and machinery has increased from 1918 to 1921–22 by £48,820,129, *i.e.*, from £96,588,009 to £145,408,138, or at the rate of £12,205,032 per annum.

The following statement shows the values of land and buildings and of plant and machinery used in connexion with manufacturing industries in each State during the year 1921–22 :—

VALUE OF LAND, BUILDINGS, PLANT, AND MACHINERY, 1921–22.

Value of—	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tasmania. 1921.	Australia.
	£	£	£	£	£	£	£
Land and buildings	32,052,303	19,810,170	6,373,504	4,711,022	3,206,295	1,169,164	67,322,458
Plant and machinery	35,229,530	21,182,110	10,253,104	4,896,264	3,596,877	2,927,795	78,085,680
Total	67,281,833	40,992,280	16,626,608	9,607,286	6,803,172	4,096,959	145,408,138

The total capital invested in land, buildings, plant, and machinery in manufacturing industries in Australia during the year 1921–22 was approximately £145,408,138 (or £26 8s. 11d. per head of population); of that sum £67,322,458 was invested in land and buildings occupied as manufactories, the remaining £78,085,680 being the value of the plant and machinery used in connexion therewith.

2. **Value of Land and Buildings.**—(i) *Total, Australia, 1918 to 1921–22.* The value of the land and buildings occupied in connexion with manufacturing industries may be conveniently classified according to the nature of the industry concerned.

The following table shows for Australia as a whole the approximate values of land and buildings occupied in connexion with manufacturing industries of various classes during each year from 1918 to 1921–22 inclusive :—

VALUE OF LAND AND BUILDINGS.—AUSTRALIA, 1918 TO 1921–22.

Class of Industry.	1918.	1918–19. <i>a</i>	1919–20. <i>a</i>	1920–21. <i>a</i>	1921–22. <i>a</i>
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	1,237,117	1,415,725	1,588,513	1,811,005	1,910,810
II. Treating oils and fats, animal, vegetable, etc.	573,005	610,573	614,877	680,763	741,683
III. Processes in stone, clay, glass, etc.	1,739,247	1,943,848	2,216,901	2,814,447	3,067,776
IV. Working in wood	2,283,985	2,349,500	2,622,071	3,061,888	3,359,738
V. Metal works, machinery, etc.	7,961,012	8,163,051	8,997,496	10,409,753	10,607,622
VI. Connected with food and drink, etc.	11,640,843	12,403,204	13,411,552	14,218,716	15,306,571
VII. Clothing and textile fabrics, etc.	5,695,268	6,059,980	6,876,671	8,265,497	10,122,483
VIII. Books, paper, printing, and engraving	4,028,048	4,029,014	4,270,008	4,738,597	5,158,723
IX. Musical instruments, etc.	98,680	121,885	134,462	195,072	226,751
X. Arms and explosives	260,550	257,520	264,020	275,482	277,562
XI. Vehicles and fittings, saddlery and harness, etc.	1,955,096	2,156,572	2,467,633	3,093,034	3,576,519
XII. Ship and boat building and repairing	1,009,201	1,059,529	1,122,468	1,391,113	1,860,720
XIII. Furniture, bedding, and upholstery	1,103,679	1,189,103	1,325,762	1,663,270	1,839,005
XIV. Drugs, chemicals, and by-products	1,318,731	1,393,237	1,446,721	1,687,297	2,059,410
XV. Surgical and other scientific instruments	94,524	106,225	104,628	132,161	156,048
XVI. Jewellery, timepieces, and plated ware	336,289	369,050	425,214	487,763	578,963
XVII. Heat, light, and power	3,873,224	3,999,806	4,342,913	4,867,348	5,138,371
XVIII. Leatherware, <i>n.e.i.</i>	165,835	178,444	231,073	304,506	310,904
XIX. Minor wares, <i>n.e.i.</i>	421,370	472,639	554,588	733,756	1,022,793
Total	45,795,704	48,278,905	53,017,571	60,831,468	67,322,458

(a) See general note on first page of this Chapter.

As shown in the above table, the total net increase during the four years was £21,526,754, or an annual average of £5,381,688. The largest increases were in Classes VII., VI., V., XI., and IV., and amounted to £4,427,215, £3,665,728, £2,646,610, £1,621,423, and £1,328,529 respectively.

(ii) *Value in each State, 1921-22.* The following table gives similar information for each State for the past year :—

VALUE OF LAND AND BUILDINGS.—STATES, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ..	£ 866,411	£ 748,030	£ 113,111	£ 109,902	£ 53,329	£ 20,033	£ 1,910,816
II. Treating oils and fats, animal, vegetable, etc. ..	458,632	182,285	34,677	41,287	18,413	6,389	741,683
III. Processes in stone, clay, glass, etc. ..	1,764,215	693,555	120,511	288,252	167,280	33,963	3,067,776
IV. Working in wood ..	1,554,847	671,435	343,498	224,092	470,583	95,283	3,359,738
V. Metal works, machinery, etc. ..	5,510,268	2,582,365	744,927	964,682	631,349	174,031	10,607,622
VI. Connected with food and drink, etc. ..	5,974,576	4,264,535	3,068,498	1,065,550	588,027	345,385	15,306,571
VII. Clothing and textile fabrics, etc. ..	4,341,854	4,298,955	555,089	499,358	264,585	162,642	10,122,483
VIII. Books, paper, printing, and engraving ..	2,464,299	1,414,435	579,717	376,400	259,262	64,610	5,158,723
IX. Musical instruments, etc. ..	136,091	84,010	..	6,650	..	..	226,751
X. Arms and explosives ..	75,522	197,940	..	4,100	..	..	277,562
XI. Vehicles and fittings, saddlery and harness, etc. ..	1,621,397	1,002,880	238,971	395,240	201,869	116,162	3,576,519
XII. Ship and boat building and repairing ..	1,538,776	249,180	10,487	49,737	5,390	7,150	1,860,720
XIII. Furniture, bedding, and upholstery ..	802,602	586,625	173,167	134,555	107,566	34,490	1,839,005
XIV. Drugs, chemicals, and by-products ..	1,133,982	572,340	12,814	198,475	132,240	9,550	2,059,410
XV. Surgical and other scientific instruments ..	58,085	35,940	31,903	13,845	16,275	..	156,048
XVI. Jewellery, timepieces, and plated ware ..	263,326	210,890	33,695	34,495	22,815	13,742	578,963
XVII. Heat, light, and power ..	2,978,500	1,326,455	270,798	255,893	226,023	80,702	5,138,371
XVIII. Leatherware, n.e.i. ..	151,947	134,665	16,590	7,470	(a)	232	310,904
XIX. Minor wares, n.e.i. ..	359,973	553,650	25,051	41,039	(b) 41,280	4,800	1,022,793
Total ..	32,052,303	19,810,170	6,373,504	4,711,022	3,206,295	1,169,164	67,322,458

(a) Included in Class XIX.

(b) Includes Class XVIII.

The maximum value for Australia of land and buildings in any particular class was in Class VI., amounting to £15,306,571, or 22.74 per cent. on the total value. The next in order of importance were Classes V., VII., VIII., and XVII., in which the values were £10,607,622, £10,122,483, £5,158,723, and £5,138,371 respectively. The sum of the values for the five classes mentioned amounted to £46,333,770, or 68.82 per cent. on the total value for all classes.

(iii) *Value in each State, 1918 to 1921-22.* The total value of factory land and buildings at the end of each year from 1918 to 1921-22 is given hereunder.

VALUE OF LAND AND BUILDINGS, 1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	£	£	£	£	£	£	£
1918 ..	20,533,171	12,847,485	5,519,316	3,564,366	2,487,967	843,399	45,795,704
1918-19 ..	22,081,877	13,673,515	5,519,316	3,672,831	2,487,967	843,399	48,278,905
1919-20 ..	24,108,890	14,957,585	5,886,215	3,977,099	3,132,014	955,768	53,017,571
1920-21 ..	28,428,917	17,313,350	6,261,266	4,495,667	3,350,608	981,660	60,831,468
1921-22 ..	32,052,303	19,810,170	6,373,504	4,711,022	3,206,295	1,169,164	67,322,458

(a) See general note on first page of this Chapter.

Since 1918 there has been a general increase throughout Australia, the States showing the greatest progress being New South Wales, Victoria, and South Australia, with annual average increases of £2,879,783, £1,740,671, and £286,664 respectively.

3. Value of Plant and Machinery.—(i) *Total, Australia, 1918 to 1921-22.* The following table shows for Australia as a whole the approximate value of plant and machinery used in factories during each year from 1918 to 1921-22 inclusive :—

VALUE OF PLANT AND MACHINERY.—AUSTRALIA, 1918 TO 1921-22.

Class of Industry.	1918.	1918-19.(a)	1919-20.(a)	1920-21.(a)	1921-22.(a)
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	1,216,281	1,382,538	1,668,023	1,823,119	1,915,266
II. Treating oils and fats, animal, vegetable, etc.	634,936	688,737	712,583	829,390	881,060
III. Processes in stone, clay, glass, etc.	2,172,225	2,414,539	2,853,294	3,565,083	4,281,438
IV. Working in wood	2,915,781	3,063,111	3,398,146	4,083,711	4,543,992
V. Metal works, machinery, etc. . .	10,259,558	10,702,907	11,959,693	14,688,625	15,833,262
VI. Connected with food and drink, etc.	13,026,771	13,648,102	14,532,708	16,472,128	18,037,602
VII. Clothing and textile fabrics, etc.	2,006,983	2,255,623	3,059,732	3,781,164	4,840,385
VIII. Books, paper, printing, and engraving	3,124,559	3,225,151	3,684,858	4,246,439	4,890,224
IX. Musical instruments, etc.	26,827	26,532	31,302	58,078	66,274
X. Arms and explosives	323,073	345,880	327,700	304,800	271,845
XI. Vehicles and fittings, saddlery and harness, etc.	477,472	532,361	627,087	853,259	941,849
XII. Ship and boat building and repairing	1,477,247	1,627,143	1,711,746	1,520,756	2,161,809
XIII. Furniture, bedding, and upholstery	281,229	306,853	369,738	466,952	505,870
XIV. Drugs, chemicals, and by-products	1,055,262	1,091,229	1,264,703	1,497,619	1,646,119
XV. Surgical and other scientific instruments	19,813	23,333	28,257	32,299	36,542
XVI. Jewellery, timepieces, and plated ware	75,437	84,453	103,690	114,892	125,764
XVII. Heat, light, and power	11,274,492	12,025,382	13,127,358	13,515,725	16,032,361
XVIII. Leatherware, n.e.l.	37,103	40,477	48,136	66,544	76,251
XIX. Minor wares, n.e.l.	387,256	413,457	490,840	734,687	997,767
Total	50,792,305	53,897,808	59,999,594	68,655,270	78,085,680

(a) See general note on first page of this Chapter.

During the past four years there has been a steady and substantial net increase amounting in all to £27,293,375, or an annual average of £6,823,344. All classes of industry participated, the largest increase being in Class V., "Metal Works, Machinery etc.," where it amounted to £5,573,704, while the next in order were Class VI., "Connected with Food and Drink, etc.," with an increase of £5,010,831, and Class XVII., "Heat, Light, and Power," £4,757,869.

(ii) *Value in each State, 1918 to 1921-22.* The figures in the previous table refer to Australia as a whole. In the following table results are shown for each State, and it will be seen that the increase is general throughout the States. New South Wales shows by far the largest advance, viz., £13,489,791; while Victoria comes next with £8,569,313.

VALUE OF PLANT AND MACHINERY.—STATES, 1918 TO 1921-22.

Year.(a)	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
1918	21,739,739	12,612,797	8,391,480	3,389,719	2,742,386	1,916,184	50,792,305
1918-19	23,651,152	13,645,220	8,391,480	3,551,386	2,742,386	1,916,184	53,897,808
1919-20	26,366,083	15,846,935	8,867,803	3,931,562	2,938,889	2,048,322	59,999,594
1920-21	31,115,444	18,179,385	9,615,509	4,473,247	3,340,158	1,931,527	68,655,270
1921-22	35,229,530	21,182,110	10,253,104	4,896,264	3,596,877	2,927,795	78,085,680

(a) See general note on first page of this Chapter.

(iii) *Value according to Industry, 1921-22.* The following table shows the value of plant and machinery used in factories in each State during 1921-22, classified according to the nature of the industry in which used :—

VALUE OF PLANT AND MACHINERY.—INDUSTRIES, 1921-22.

Class of Industry.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. . .	885,907	665,655	166,711	91,939	56,419	48,635	1,915,266
II. Treating oils and fats, animal, vegetable, etc. .	547,156	206,595	58,723	52,906	14,417	1,263	881,060
III. Processes in stone, clay, glass, etc. . .	2,518,534	814,015	172,062	457,897	287,387	31,543	4,281,438
IV. Working in wood . .	1,251,549	985,165	688,869	122,601	1,251,521	244,287	4,543,992
V. Metal works, machinery, etc. . .	9,500,679	2,754,560	1,126,694	872,366	433,931	1,145,032	15,833,262
VI. Connected with food and drink, etc. . .	6,262,806	4,373,595	5,724,920	959,500	490,346	226,435	18,037,602
VII. Clothing and textile fabrics, etc. . .	1,487,170	2,870,235	183,481	168,542	49,654	81,303	4,840,385
VIII. Books, paper, printing, and engraving . .	2,241,029	1,711,570	381,383	266,380	212,024	77,838	4,890,224
IX. Musical instruments, etc. .	42,343	22,275	..	1,656	..	..	66,274
X. Arms and explosives . .	54,935	216,460	..	450	..	..	271,845
XI. Vehicles and fittings, saddlery and harness, etc. . .	401,991	298,480	58,805	122,324	34,674	25,575	941,849
XII. Ship and boat building and repairing . .	1,936,849	115,755	30,615	72,540	3,030	3,020	2,161,809
XIII. Furniture, bedding and upholstery . .	203,217	144,215	70,003	43,294	31,226	13,915	505,870
XIV. Drugs, chemicals, and by-products . .	721,595	431,195	7,854	342,471	140,431	2,573	1,646,119
XV. Surgical and other scientific instruments . .	14,608	10,930	5,060	4,164	1,780	..	36,542
XVI. Jewellery, timepieces, and plated ware . .	43,104	59,390	7,016	11,310	2,674	2,270	125,764
XVII. Heat, light, and power . .	6,780,895	4,820,200	1,563,857	1,270,722	573,620	1,023,067	16,032,361
XVIII. Leatherware, n.e.i. . .	32,913	39,600	2,433	965	(a)	340	76,251
XIX. Minor wares, n.e.i. . .	302,250	642,220	4,618	34,237	(b)13,743	699	997,767
Total . . .	35,229,530	21,182,110	10,253,104	4,896,264	3,596,877	2,927,795	78,085,680

(a) Included with Class XIX.

(b) Includes Class XVIII.

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £18,037,602, or 23.10 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," amounting to £16,032,361, or 20.53 per cent. on the total, followed by Class V., "Metal Works, Machinery, etc.," which amounts to £15,833,262, or 20.28 per cent. on the total value. The total for these three classes amounts to £49,903,225, or 63.91 per cent. on the total value for all classes.

§ 9. Individual Industries.

1. **General.**—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories adopted by the Conference of Statisticians in 1906. In order to make the information complete, it is necessary to furnish details of the development of individual industries. While it is not possible, within the limits of this work, to give a full and detailed account of all the manufacturing industries of Australia, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanneries.**—(i) *Details for each State, 1921–22.* In Class I. the most important industry is tanning. Until recent years, the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The position of the industry in the several States is as follows :—

TANNERIES, 1921–22.

Items.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W.A. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	80	48	17	9	7	3	164
Number of employees	1,333	2,384	334	200	105	82	4,438
Actual horse-power of engines employed	2,974	3,568	416	331	249	158	7,697
Approx. value of land and buildings £	274,946	357,500	22,240	29,159	25,470	12,384	721,699
Approx. value of plant and machinery £	186,079	319,015	28,634	17,710	20,990	8,580	581,008
Total amount of wages paid during year £	294,943	501,604	53,168	47,279	21,908	16,107	935,009
Value of fuel used	21,516	41,298	3,181	4,316	1,544	726	72,581
Value of raw material worked up £	1,373,056	1,779,168	256,258	127,399	74,871	73,248	3,684,000
Total value of output	1,891,201	2,740,429	395,796	203,436	120,471	100,263	5,451,596
Value added in process of manufacture £	518,145	961,261	139,538	76,037	45,600	27,015	1,767,596

(ii) *Development in Australia, 1918 to 1921–22.* The development of the tanning industry during the period 1918 to 1921–22 is shown in the following table :—

TANNERIES.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	153	153	160	164	164
Number of employees	3,396	3,688	4,147	4,026	4,438
Actual horse-power of engines used ..	4,884	5,247	6,367	6,868	7,697
Approx. value of land and buildings £	441,737	459,163	552,521	684,892	721,699
Approx. value of plant and machinery £	328,927	360,682	422,976	520,400	581,008
Total amount of wages paid	493,880	577,043	777,368	825,751	935,009
Value of fuel used	40,558	45,957	60,981	62,247	72,581
Value of raw materials worked up £	3,831,180	4,423,092	6,837,835	4,596,271	3,684,000
Value of final output	4,990,412	5,762,741	8,772,336	6,179,417	5,451,596
Value added in process of manufacture £	1,159,232	1,339,649	1,934,501	1,583,146	1,767,596

The above table shows increases in all items, except materials used, in the tanning industry during the past four years. Owing to the decline in prices during the latest year under review, monetary increases do not accurately reflect the measure of growth, but the production of leather increased from 42,200,138 lbs. in 1918 to 49,846,838 lbs. in 1921–22, while the number of basils turned out increased by 1,440,744 during the period.

(iii) *Raw Materials Used, 1921–22.* The quantities of raw materials used in tanneries in each State are shown in the following table :—

TANNERIES.—RAW MATERIALS USED, 1921–22.

Particulars.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
Hides and calf skins .. No.	744,678	1,305,489	143,914	66,898	39,277	28,810	2,329,066
Sheep pelts	3,912,006	1,626,450	76,580	73,359	..	98,811	5,787,206
Other skins	247,684	416,367	323,732	7,035	31,473	920	1,027,211
Bark Tons	11,836	13,852	2,411	1,329	924	469	30,821

3. **Fellmongering and Wool-scouring Works.**—(i) *Details for each State, 1921–22.* The next industry in importance in Class I. is that of fellmongering and wool-scouring, one of the earliest industries established in Australia. The following table gives particulars of the industry in each State during the past year :—

FELLMONGERING AND WOOL-SCOURING WORKS, 1921–22.

Items.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W.A. 1921.	Tas. 1921.	Australia.
Number of factories	45	30	17	2	3	..	97
Number of employees	1,531	611	321	60	48	..	2,571
Actual horse-power of engines used	3,616	1,773	1,035	99	134	..	6,657
Approx. value of land and buildings £	260,065	183,345	77,545	<i>a</i>	<i>a</i>	..	541,561 <i>b</i>
Approx. value of plant and machinery £	393,769	185,340	117,875	<i>a</i>	<i>a</i>	..	720,972 <i>b</i>
Total amount of wages paid £	330,210	123,839	57,171	<i>a</i>	<i>a</i>	..	533,705 <i>b</i>
Value of fuel used	£ 52,269	£ 31,827	£ 10,451	<i>a</i>	<i>a</i>	..	99,741 <i>b</i>
Value of raw material worked up £	3,148,888	967,034	1,237,429	<i>a</i>	<i>a</i>	..	5,660,278 <i>b</i>
Value of final output	£ 3,786,718	£ 1,212,620	£ 1,347,707	<i>a</i>	<i>a</i>	..	6,699,452 <i>b</i>
Value added in process of manufacture £	637,830	245,586	110,278	<i>a</i>	<i>a</i>	..	1,039,174 <i>b</i>

(a) Information not available for publication.

(b) Including South Australia and Western Australia.

(ii) *Development in Australia, 1918 to 1921–22.* The following return furnishes particulars of fellmongering and wool-scouring establishments in Australia for the last five years :—

FELLMONGERING AND WOOL-SCOURING WORKS.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	102	107	110	97	97
Number of employees	3,191	3,392	3,610	2,707	2,571
Actual horse-power of engines used	4,991	5,707	6,025	6,278	6,657
Approx. value of land and buildings £	348,170	466,658	514,499	548,084	541,561
Approx. value of plant and machinery £	488,301	584,343	683,227	681,366	720,972
Total amount of wages paid	£ 404,079	£ 517,161	£ 652,842	£ 510,286	£ 533,705
Value of fuel used	£ 66,113	£ 84,478	£ 99,981	£ 84,833	£ 99,741
Value of raw materials worked up £	10,290,131	11,213,481	12,279,135	6,682,138	5,660,278
Value of final output	£ 12,105,929	£ 13,126,314	£ 14,745,652	£ 7,913,477	£ 6,699,452
Value added in process of manufacture £	1,815,798	1,912,833	2,466,517	1,231,339	1,039,174

The wool-scouring industry developed considerably under the régime of the Central Wool Committee, and during 1919–20 the record output of 107,726,653 lbs. of scoured wool was produced. The production fell to 68,703,325 lbs. in 1921–22, which is, however, equal to the average pre-war output.

4. **Soap and Candle Factories.**—(i) *Details for each State, 1921–22.* In Class II., soap and candle factories are the most important establishments. The manufacture of these two products is frequently carried on in the same factory, so that separate returns cannot be obtained; it may, however, be noted that the manufacture of soap is the more important. The following table gives particulars of soap and candle factories in each State during the year 1921–22 :—

SOAP AND CANDLE FACTORIES, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–21.	Q'land. 1921.	S. Aust. 1921–22.	W.A. 1921. (c)	Tas. 1921.	Australia.
Number of factories	27	17	11	6	7	1	69
Number of employees	1,122	742	161	178	105	21	2,329
Actual horse-power of engines employed	1,021	493	188	180	123	10	2,015
Approx. value of land and buildings £	238,452	155,640	34,677	28,525	<i>a</i>	<i>a</i>	479,872 <i>b</i>
Approx. value of plant and machinery £	330,403	174,460	58,723	32,002	<i>a</i>	<i>a</i>	610,418 <i>b</i>
Total amount of wages paid during year £	170,925	139,519	27,470	37,010	<i>a</i>	<i>a</i>	394,567 <i>b</i>
Value of fuel used	£ 44,093	£ 37,878	£ 4,487	£ 4,884	<i>a</i>	<i>a</i>	94,204 <i>b</i>
Value of raw material worked up £	721,702	625,335	123,612	180,843	<i>a</i>	<i>a</i>	1,755,252 <i>b</i>
Total value of output	£ 1,264,540	£ 1,096,955	£ 218,505	£ 282,547	<i>a</i>	<i>a</i>	3,007,286 <i>b</i>
Value added in process of manufacture £	542,838	471,620	94,893	101,704	<i>a</i>	<i>a</i>	1,252,034 <i>b</i>

(a) Particulars not available for publication.

(b) Including Western Australia and Tasmania.

(c) Includes barkmilling and oil establishments.

(ii) *Development in Australia, 1918 to 1921-22.* The following table gives similar particulars for the last five years as regards Australia as a whole :—

SOAP AND CANDLE FACTORIES.—AUSTRALIA, 1918 TO 1921-22.

Items.	1918. <i>a</i>	1918 19. <i>a</i>	1919-20. <i>b</i>	1920-21. <i>b</i>	1921-22. <i>c</i>
Number of factories	62	60	61	62	69
Number of employees	2,128	1,902	2,163	2,008	2,329
Actual horse-power of engines used ..	1,083	1,568	1,749	1,782	2,015
Approx. value of land and buildings £	400,517	426,909	428,824	426,339	479,872
Approx. value of plant and machinery £	444,219	488,402	486,187	537,534	610,418
Total amount of wages paid ..	242,960	251,762	296,352	326,449	394,567
Value of fuel used	£ 67,639	65,469	81,938	88,728	94,204
Value of raw material worked up £	1,762,408	1,830,417	2,389,706	2,119,957	1,755,252
Value of final output	£ 2,550,562	2,618,806	3,377,783	2,941,833	3,007,286
Value added in process of manufacture £	788,154	788,389	988,077	821,876	1,252,034

(a) Excluding three soap and candle establishments in Western Australia, and one in Tasmania.

(b) Excluding three soap and candle establishments in Western Australia.

(c) Including two bark mills, one fibre works, and one olive oil establishment in Western Australia.

(iii) *Raw Materials Used, 1918 to 1921-22.* The following statement shows the quantity of certain raw materials used in soap and candle factories in Australia during the years 1918 to 1921-22 :—

SOAP AND CANDLE FACTORIES.—RAW MATERIALS USED, AUSTRALIA, 1918 TO 1921-22.

Particulars.	1918. <i>a</i>	1918-19. <i>a</i>	1919-20. <i>a</i>	1920-21. <i>a</i>	1921-22. <i>a</i>
Tallow cwt.	423,021	431,638	390,267	353,001	460,164
Alkali "	144,112	126,981	123,101	120,882	134,994
Coconut oil gal.	533,685	624,802	469,549	459,013	591,117

(a) Exclusive of Western Australia.

(iv) *Production of Soap and Candles, 1918 to 1921-22.* The subjoined statement furnishes particulars of the output of soap and candles during the past five years :—

SOAP AND CANDLE FACTORIES.—PRODUCTION, AUSTRALIA, 1918 TO 1921-22.

Particulars.	1918. <i>a</i>	1918-19. <i>a</i>	1919-20. <i>a</i>	1920-21. <i>a</i>	1921-22. <i>a</i>
Soap cwt.	746,166	694,456	788,478	692,192	824,002
Candles "	101,098	97,692	104,676	87,304	91,116

(a) Exclusive of Western Australia.

5. *Saw-mills, etc.*—(i) *Details for States, 1921–22.* The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw-mills are not available for some of the States, both forest and other saw-mills, as well as joinery, moulding, and box factories, have been combined in the following table :—

SAW-MILLS, FOREST AND OTHER ; JOINERY, ETC., 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	702	547	293	84	147	170	1,943
Number of employees	8,183	8,836	4,588	1,437	5,411	2,067	30,522
Actual horse-power of engines employed	18,351	14,174	9,601	2,461	8,701	2,758	56,046
Approximate value of land and buildings £	1,351,391	592,135	315,325	217,947	470,583	89,063	3,036,444
Approximate value of plant and machinery £	1,121,064	904,245	633,435	120,761	1,251,521	240,199	4,271,225
Total amount of wages paid during year £	1,485,435	1,680,211	774,893	273,863	1,151,052	336,077	5,701,531
Value of fuel used £	44,525	35,148	15,728	7,834	8,824	2,990	115,049
Value of raw material worked up £	3,596,810	2,131,563	1,213,828	1,013,347	240,041	153,030	8,348,619
Total value of output £	5,716,590	4,860,148	2,479,158	1,505,541	1,661,715	608,958	16,832,110
Value added in process of manufacture £	2,119,780	2,728,585	1,265,330	492,194	1,421,674	455,928	8,483,491

(ii) *Development in Australia, 1918 to 1921–22.* The development of forest and other saw-mills, etc., since 1918 is shown in the following table :—

**SAW-MILLS, FOREST AND OTHER ; JOINERY, ETC.—AUSTRALIA,
1918 TO 1921–22.**

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of establishments	1,575	1,621	1,766	1,897	1,943
Number of employees	22,756	24,427	28,171	30,074	30,522
Actual horse-power of engines used	45,756	46,641	51,691	57,947	56,046
Approx. value of land and buildings £	2,086,166	2,132,509	2,376,011	2,773,952	3,036,444
Approx value of plant and machinery £	2,784,355	2,937,691	3,253,706	3,868,390	4,271,225
Total amount of wages paid £	2,870,214	3,189,087	4,052,707	5,248,331	5,701,531
Value of fuel used £	69,506	78,294	91,341	102,195	115,049
Value of raw material worked up £	5,159,691	5,773,999	7,624,110	9,344,674	8,348,619
Value of final output £	9,829,872	10,890,530	14,276,983	17,446,035	16,832,110
Value added in process of manufacture £	4,670,181	5,116,531	6,652,873	8,101,361	8,483,491

The pre-war development in Australia in the building and other trades using timber received a temporary check during the war years, but the all-round increases since 1918 in the number of employees, in wages, value of materials used, and final output, as well as in capital invested in land and buildings and plant and machinery, show that the industries concerned have practically regained their normal rate of progression.

6. *Agricultural Implement Works.*—(i) *General.* The manufacture of agricultural implements is an important industry in Australia, and is of particular interest, owing to the fact that it was one of the first to which it was sought to apply the so-called “New Protection.” The articles manufactured include stripper-harvesters, strippers, stump-jump and other ploughs, harrows, disc and other cultivators, winnowers, corn-shellors and baggers, drills, and other implements employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

(ii) *Details for States, 1921–22.* The following table gives particulars of the agricultural implement works in each State for the year 1921–22 :—

AGRICULTURAL IMPLEMENT WORKS, 1921–22.

Items.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	25	58	8	44	5	..	140
Number of employees	461	2,916	187	916	216	..	4,696
Actual horse-power of engines employed	294	1,601	237	946	234	..	3,312
Approx. value of land and buildings £	126,602	180,320	26,970	73,001	28,340	..	435,233
Approx. value of plant and machinery £	51,102	296,500	25,043	83,696	22,555	..	478,896
Total amount of wages paid during year £	97,698	643,874	36,730	158,249	51,059	..	987,610
Value of fuel used	£ 3,480	43,794	1,171	9,523	2,442	..	60,410
Value of raw material worked up	£ 103,317	806,066	39,838	192,230	246,120	..	1,387,571
Total value of output	£ 259,675	1,767,843	98,648	412,727	324,982	..	2,863,875
Value added in process of manufacture £	156,358	961,777	58,810	220,497	78,862	..	1,476,304

(iii) *Development in Australia, 1918 to 1921–22.* The Agricultural Implement industry declined considerably during and immediately after the war, but since 1919–20 the number of employees increased by more than 50 per cent., while the value of the finished product was more than doubled in the two years. Details for the past five years are as follows :—

AGRICULTURAL IMPLEMENT WORKS.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.a	1919–20.a	1920–21.a	1921–22.
Number of factories	142	138	141	141	140
Number of employees	3,336	2,914	3,116	4,299	4,696
Actual horse-power of engines used	2,566	2,338	2,505	2,576	3,312
Approx. value of land and buildings £	355,830	367,951	368,897	392,870	435,233
Approx. value of plant and machinery £	360,621	350,754	372,949	431,152	478,896
Total amount of wages paid	£ 428,522	420,750	465,558	794,554	987,610
Value of fuel used	£ 30,011	26,755	30,096	55,709	60,410
Value of raw material worked up	£ 762,969	531,766	586,048	1,064,611	1,387,571
Value of final output	£ 1,415,375	1,149,121	1,282,931	2,288,713	2,863,875
Value added in process of manufacture £	652,406	617,355	696,883	1,224,102	1,476,304

(a) Excluding three establishments in Western Australia.

7. Engineering Works, Ironworks, and Foundries.—(i) *Details for States, 1921–22.* The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanized iron works, stove and oven-making works, and wire-working establishments are not included. The combination of industries is rendered necessary owing to the limited classification still adopted by some of the States.

ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	449	571	99	72	67	23	1,281
Number of employees	13,885	10,906	2,317	1,992	1,080	448	30,628
Actual horse-power of engines employed	33,996	12,591	1,805	1,586	1,431	371	51,780
Approximate value of land and buildings	£ 2,430,999	1,180,685	217,565	183,525	142,425	41,815	4,197,014
Approximate value of plant and machinery	£ 3,834,112	1,413,355	263,237	232,866	137,889	52,208	5,933,667
Total amount of wages paid during year	£ 2,919,245	2,188,095	465,859	388,285	216,898	87,217	6,265,599
Value of fuel used	£ 334,997	204,821	24,517	38,192	15,146	5,600	623,273
Value of raw materials worked up	£ 7,620,536	2,709,952	470,625	629,989	236,244	60,061	11,727,407
Total value of output	£ 12,011,000	6,329,503	1,150,995	1,240,782	544,811	191,504	21,468,595
Value added in process of manufacture	£ 4,390,464	3,619,551	680,370	610,793	308,567	131,443	9,741,188

In addition to engineering works which supply ordinary requirements, there is now a large number of establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry.

(ii) *Development in Australia, 1918 to 1921-22.* The development of engineering works, ironworks, and foundries in Australia since 1918 is shown in the following table :—

ENGINEERING WORKS, IRONWORKS, AND FOUNDRIES.—AUSTRALIA, 1918 TO 1921-22.

Items.	1918. <i>a</i>	1918-19 <i>a</i> .	1919-20 <i>a</i> .	1920-21 <i>a</i> .	1921-22.
Number of factories	1,012	1,058	1,141	1,248	1,281
Number of employees	23,783	25,834	31,050	33,914	30,628
Actual horse-power of engines used	44,317	47,078	53,410	48,852	51,780
Approx. value of land and buildings £	2,910,881	3,139,984	3,527,933	4,108,640	4,197,014
Approx. value of plant and machinery £	4,744,750	5,120,625	6,339,285	5,702,388	5,933,667
Total amount of wages paid £	3,365,045	3,821,623	5,161,441	6,523,651	6,265,599
Value of fuel used £	493,116	649,119	1,037,012	631,032	623,273
Value of raw material worked up £	7,520,930	9,942,386	11,928,660	14,247,190	11,727,407
Value of final output £	13,322,795	16,291,175	20,209,329	24,361,080	21,468,595
Value added in process of manufacture £	5,801,865	6,348,789	8,280,669	10,113,890	9,741,188

(a) Including three agricultural implement establishments in Western Australia.

The expansion of local industry during recent years has necessitated an increased provision of machinery, and the difficulty of obtaining overseas supplies during the war and for some years after created an opportunity of which the Australian engineering trade has availed itself largely. Since 1918 the number of establishments has increased by more than 26 per cent., the number of employees by 28 per cent., the amount of wages paid 86 per cent., the amount of capital invested in land, buildings, plant, and machinery 32 per cent., and the output by 61 per cent. These industries are all large consumers of Australian materials, and for this reason their progress is doubly important.

8. *Railway and Tramway Workshops.*—(i) *Details for each State, 1921-22.* The railway and tramway workshops which form an important item in Class V. are chiefly State-owned institutions. The following table giving details concerning them includes, however, private and municipal establishments for manufacturing and repairing rolling-stock :—

RAILWAY AND TRAMWAY WORKSHOPS, 1921-22.

Items.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	39	18	12	19	6	7	101
Number of employees	10,831	5,415	2,588	2,938	1,657	373	23,802
Actual horse-power of engines employed	6,672	2,658	2,943	1,136	2,264	216	15,889
Approximate value of land and buildings £	1,376,809	734,520	351,020	363,829	454,140	7,075	3,287,393
Approximate value of plant and machinery £	1,586,953	668,400	253,809	240,939	271,440	90,248	3,111,789
Total amount of wages paid during year £	2,604,366	1,282,617	619,907	656,424	357,177	89,466	5,609,957
Value of fuel used £	48,963	35,853	10,407	24,231	20,782	3,121	143,357
Value of raw material worked up £	1,904,000	1,574,766	364,816	324,584	313,330	36,562	4,518,058
Total value of output £	4,591,907	3,182,559	892,017	1,118,314	683,474	142,391	10,610,662
Value added in process of manufacture £	2,687,907	1,607,793	527,201	793,730	370,144	105,829	6,092,604

In addition to the above, a railway workshop is in operation in the Northern Territory. The work is confined almost exclusively to repairs to rolling-stock, etc., no new goods being manufactured. For the sake of convenience this establishment is not included in any of the tables in this chapter.

(ii) *Development in Australia, 1918 to 1921-22.* The following table shows the development of railway and tramway workshops in Australia since 1918 :—

RAILWAY AND TRAMWAY WORKSHOPS.—AUSTRALIA, 1918 TO 1921-22.

Items.	1918.	1918-19.	1919-20.	1920-21.	1921-22.
Number of factories	95	94	94	103	101
Number of employees	18,071	19,036	21,488	23,670	23,802
Actual horse-power of engines used ..	12,874	13,434	15,626	16,142	15,889
Approx. value of land and buildings £	2,904,419	2,944,626	2,976,838	3,123,818	3,287,393
Approx. value of plant and machinery £	2,614,127	2,636,591	2,616,001	2,810,282	3,111,789
Total amount of wages paid £	2,839,827	3,106,829	3,977,702	5,273,942	5,609,957
Value of fuel used	£ 81,487	90,818	104,496	132,956	143,357
Value of raw material worked up £	1,934,645	2,082,557	2,829,907	3,808,850	4,518,058
Value of final output	£ 5,037,255	5,418,996	7,116,984	9,488,649	10,610,662
Value added in process of manufacture £	3,102,610	3,336,439	4,287,077	5,679,799	6,092,604

The growth of the railway and tramway systems, conjointly with heavy increases in passenger and goods traffic throughout Australia, has resulted in corresponding activity in workshops engaged in the manufacture or repair of rolling-stock, etc. During the war, the operations of these establishments were restricted to necessary work, but since 1918 the rate of expansion has been rapid. The number of employees has risen from 18,071 to 23,802, and the value of the output has been doubled during the past four years.

9. *Smelting Works, etc.*—The following table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works is not uniform in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

SMELTING, CYANIDE, PYRITES, ETC., WORKS, 1921-22.

Items.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W.A. 1921. (a)	Tas. 1921.	Australia.
Number of factories	21	12	8	2	..	4	47
Number of employees	3,611	110	600	1,166	..	675	6,162
Actual horse-power of engines employed ..	27,957	101	5,420	5,346	..	14,124	52,948
Approx. value of land and buildings £	591,590	18,820	26,019	b	..	b	£ 1,005,351
Approx. value of plant and machinery £	2,926,311	27,005	489,390	b	..	b	£ 4,694,528
Total amount of wages paid during year £	944,476	18,996	81,707	b	..	b	£ 1,417,875
Value of fuel used	£ 1,094,907	3,799	52,555	b	..	b	£ 1,386,455
Value of raw material worked up £	4,624,382	125,361	152,837	b	..	b	£ 7,125,665
Total value of output	£ 8,591,560	172,948	345,705	b	..	b	£ 12,270,376
Value added in process of manufacture £	3,967,178	47,587	192,868	b	..	b	£ 5,144,711

(a) See third paragraph below.

(b) Information not available for publication.

(c) Including South Australia and Tasmania.

In New South Wales the figures quoted represent twenty-one smelting works; those for Victoria include four cyanide works, five metallurgical, one pyrites, and two smelting works; Queensland smelting and cyaniding works; South Australia two smelting works; and Tasmania four smelting works.

The figures for the base metal industry during 1921-22 show a decrease of 1,235 employees on the previous year's totals, but there was an addition of 7,705 to the horse-power of machinery employed, while the value of the output was practically identical with that of 1920-21.

In Western Australia all the plants are worked on the mines, and are therefore not included.

10. Bacon-curing Factories.—(i) *Details for each State, 1921-22.* The following table gives particulars of factories engaged in bacon-curing in each State during the past year :—

BACON-CURING FACTORIES, 1921-22.

Items.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	19	22	6	10	6	4	67
Number of employees	266	477	400	127	70	21	1,361
Actual horse-power of engines employed	527	1,424	523	206	229	70	2,979
Approximate value of land and buildings £	106,581	178,940	90,903	21,072	29,038	4,379	430,913
Approximate value of plant and machinery £	50,596	110,900	47,188	12,408	15,044	1,886	238,022
Total amount of salaries and wages paid £	65,288	103,783	88,747	23,500	14,668	3,313	299,299
Value of fuel used £	11,519	17,785	10,231	2,108	2,217	476	44,336
Value of raw material worked up £	713,688	1,089,984	724,963	226,144	124,312	61,467	2,940,558
Total value of output £	938,418	1,366,832	1,093,292	277,680	149,143	68,231	3,893,596
Value added in process of manu- facture £	224,730	276,848	368,329	51,536	24,831	6,764	953,038

(ii) *Quantity and Value of Production.* The following table shows the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State for the year 1921-22 :—

BACON-CURING FACTORIES.—PIGS KILLED, AND PRODUCTION, 1921-22.

Particulars.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tasmania. 1921.	Aus- tralia.
PIGS KILLED.							
Number	180,331	163,917	151,735	45,659	(a)18,872	8,995	569,509
PRODUCTS (,000 OMITTED).							
Bacon and ham lbs.	18,544	15,584	11,974	4,169	1,729	841	52,841
Lard „	771	765	800	247	192	57	2,832
VALUE.							
Bacon and ham £	869,818	1,187,271	772,194	221,297	116,507	60,263	3,227,350
Lard £	22,934	25,512	31,867	9,380	10,381	3,149	103,223
Other products £	65,868	154,049	289,231	47,003	b	4,819	560,970

(a) In Western Australia, a portion of the bacon and ham treated in factories is imported and subsequently smoked in that State. (b) Not available.

Bacon and ham and other pig products are dealt with more fully in Chapter XVIII., *Farmyard, Dairy, and Bee Products.*

11. **Butter, Cheese, and Condensed Milk Factories.**—(i) *Details for each State, 1921–22.* The subjoined table gives particulars of butter, cheese and condensed milk factories in each State during the year 1921–22 :—

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W.A. 1921.	Tas. 1921.	Australia.
Number of factories	183	188	134	46	7	33	591
Number of employees	1,417	2,326	1,198	262	37	128	5,368
Actual horse-power of engines employed	4,047	4,369	2,478	572	216	265	11,947
Approximate value of land and buildings £	394,428	596,315	182,190	119,665	17,279	25,883	1,335,760
Approximate value of plant and machinery £	481,597	799,110	298,223	87,264	17,362	27,613	1,711,169
Total amount of wages paid ..	£ 308,891	492,446	240,860	42,986	7,987	16,690	1,109,860
Value of fuel used £	84,373	128,784	39,999	6,787	1,501	2,141	263,585
Value of raw material worked up £	6,100,401	5,953,832	4,895,529	679,199	96,768	336,720	18,062,449
Total value of output £	7,105,654	7,115,642	6,504,630	765,220	121,141	391,328	22,003,615
Value added in process of manu- facture £	1,005,253	1,161,810	1,609,101	86,021	24,373	54,608	3,941,166

(ii) *Development in Australia, 1918 to 1921–22.* The following table shows the progress of the factories in this industry during the past four years :—

**BUTTER, CHEESE, AND CONDENSED MILK FACTORIES.—AUSTRALIA,
1918 TO 1921–22.**

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	557	558	563	579	591
Number of employees	4,075	4,369	4,544	4,981	5,368
Actual horse-power of engines used ..	9,279	9,491	10,102	11,920	11,947
Approx. value of land and buildings ..	£ 823,176	907,148	1,060,544	1,229,964	1,335,760
Approx. value of plant and machinery ..	£ 998,841	1,107,127	1,262,706	1,491,974	1,711,169
Total amount of wages paid	£ 576,548	633,076	742,341	944,783	1,109,860
Value of fuel used	£ 116,228	140,125	167,142	225,356	263,585
Value of raw material worked up	£ 12,642,071	13,177,643	13,737,678	22,096,843	18,062,449
Value of final output	£ 14,322,025	15,120,395	15,989,419	25,400,335	22,003,615
Value added in process of manufacture ..	£ 1,679,954	1,942,752	2,251,741	3,303,492	3,941,166

(iii) *Quantity and Value of Production.* The following table shows the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during the past year :—

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES.—PRODUCTION, 1921–22.

Particulars.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tasmania. 1921.	Aus- tralia.
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MILK USED (,000 OMITTED).

Butter factories gals.	208,400	175,853	117,412	21,073	3,253	8,355	534,346
Cheese "	7,377	5,327	13,265	3,270	..	728	29,967
Condensed milk factories "	2,372	10,738	3,986	..	..	..	17,096

PRODUCTS (,000 OMITTED).

Butter lbs.	95,695	77,501	58,550	10,658	1,532	3,476	247,412
Cheese "	7,044	5,360	15,189	3,392	..	724	31,709
Condensed and concentrated milk lbs.	6,022	36,556	15,168	..	..	..	57,746

**BUTTER, CHEESE, AND CONDENSED MILK FACTORIES.—PRODUCTION,
1921-22—continued.**

Particulars.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tasmania. 1921.	Aus- tralia.
VALUE (,000 OMITTED).							
Butter	£ 6,528	4,790	4,929	664	134	361	17,406
Cheese	£ 281	192	794	101	..	31	1,399
Condensed and con- centrated milk ..	£ 256	1,365	782	..	..	..	2,403

In addition to the condensed and concentrated milk made in Australia during 1921-22, 12,636,906 lbs. of powdered milk, valued at £701,472, were manufactured, principally in Victoria.

The butter, cheese, and condensed milk industries are dealt with more fully in the Chapter entitled *Farmyard, Dairy, and Bee Products*.

12. Meat and Fish Preserving, Ice and Refrigerating Works.—These industries are now of considerable importance in Australia. Large freezing works have been installed at many ports throughout the continent for the purpose of freezing produce chiefly for export, while insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world.

The details given in the subjoined table include ice-making and freezing works, also meat-canning factories, separate particulars for each item for all the States not being available.

MEAT AND FISH PRESERVING, ICE AND REFRIGERATING WORKS, 1921-22.

Items.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	137	47	59	14	27	12	296
Number of employees	1,865	1,120	3,573	207	160	68	6,993
Actual horse-power of engines employed	9,316	7,934	12,199	1,698	1,159	247	32,553
Approximate value of land and buildings	£ 1,263,044	877,750	1,648,818	a	52,732	a	b4,059,598
Approximate value of plant and machinery	£ 1,069,476	726,525	979,309	a	65,670	a	b2,981,151
Total amount of wages paid dur- ing year	£ 342,713	258,373	678,417	a	31,286	a	b1,367,325
Value of fuel used	£ 105,805	60,837	116,436	22,839	14,378	2,605	322,900
Value of raw material worked up ..	£ 5,292,721	1,213,949	2,535,616	56,162	79,129	1,840	9,179,417
Total value of output	£ 6,063,025	1,684,134	3,609,654	140,556	146,085	31,553	11,675,007
Value added in process of manu- facture	£ 770,304	470,185	1,074,038	84,394	66,956	29,713	2,495,590

(a) Information not available for publication. (b) Including South Australia and Tasmania.

Exclusive of Victoria, for which State particulars are not available, the returns show that 168,882 tons of ice, valued at £381,272, were manufactured in Australia in 1921-22.

Full particulars regarding quantities and values of beef, mutton, and lamb preserved by cold process, exported from Australia during a series of years, will be found in Chapter XVI.

13. Biscuit Factories.—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1921–22 :—

BISCUIT, ETC., FACTORIES, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	12	8	21	3	14	3	61
Number of employees	1,953	1,311	580	183	258	91	4,376
Actual horse-power of engines employed	1,198	465	295	110	149	84	2,301
Approximate value of land and buildings £	173,612	101,000	82,426	<i>a</i>	30,751	<i>a</i>	<i>b</i> 440,647
Approximate value of plant and machinery £	121,663	94,685	40,502	<i>a</i>	16,326	<i>a</i>	<i>b</i> 298,688
Total amount of wages paid during year £	221,892	181,386	107,528	<i>a</i>	34,021	<i>a</i>	<i>b</i> 572,033
Value of fuel used £	26,880	21,335	4,696	2,809	4,507	1,328	61,555
Value of raw material worked up £	857,588	588,563	254,347	70,807	116,876	25,882	1,914,063
Total value of output £	1,395,505	942,440	478,964	106,707	181,363	46,294	3,151,273
Value added in process of manufacture £	537,917	353,877	224,617	35,900	64,487	20,412	1,237,210

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

14. Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Factories.—(i) *Details for each State, 1921–22.* The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1921–22. Separate returns for the different branches of the industry are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, ETC., FACTORIES, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	41	50	16	20	13	24	164
Number of employees	1,834	2,272	336	563	140	813	5,958
Actual horse-power of engines employed	779	1,045	281	202	186	764	3,257
Approximate value of land and buildings £	309,873	230,115	66,247	96,869	16,281	111,099	830,484
Approximate value of plant and machinery £	184,101	168,015	62,289	64,411	19,790	58,195	556,801
Total amount of wages paid during year £	193,922	299,072	40,476	55,905	11,864	83,778	685,017
Value of fuel used £	12,391	22,185	2,010	5,316	1,526	5,559	48,987
Value of raw material worked up £	897,731	943,821	118,254	223,408	70,878	287,176	2,541,268
Total value of output £	1,285,095	1,538,230	194,363	353,200	93,505	511,386	3,975,779
Value added in process of manufacture £	387,364	594,409	76,109	129,792	22,627	224,210	1,434,511

(ii) *Development in Australia, 1918 to 1921–22.* The following table refers to jam and fruit preserving, etc., establishments in Australia for the last five years :—

JAM AND FRUIT PRESERVING, PICKLES, ETC., FACTORIES.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	146	143	152	154	164
Number of employees	6,024	6,174	6,974	6,243	5,958
Actual horse-power of engines employed	1,991	1,945	2,526	2,996	3,257
Approx. value of land and buildings £	516,113	528,572	576,302	760,855	830,484
Approx. value of plant and machinery £	274,555	284,085	348,549	516,348	556,801
Total amount of wages paid £	538,344	570,291	731,473	749,980	685,017
Value of fuel used £	36,995	44,477	57,848	58,737	48,987
Value of raw material worked up £	2,930,403	3,326,546	3,757,611	3,465,562	2,541,268
Total value of output £	4,047,912	4,663,026	5,487,960	5,262,608	3,975,779
Value added in process of manufacture £	1,117,509	1,336,480	1,730,349	1,797,046	1,434,511

The progress of the jam industry was very marked during the war years, when an important export trade was built up. During the past three years, however, the exports

have declined, and the production of jams and jellies fell from 135,737,756 lbs. in 1918-19 to 57,195,815 lbs. in 1921-22. The output of preserved fruit and sauce has, however, increased during the past four years.

(iii) *Production.* The following table shows the quantity and value of jams, pickles, and sauces manufactured in each State during 1921-22 :—

JAMS, PRESERVED FRUIT, PICKLES AND SAUCES.—OUTPUT, 1921-22.

Particulars.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tasmania. 1921.	Aus- tralia.
QUANTITY (,000 OMITTED).							
Jams lbs.	19,719	17,664	2,879	6,251	419	10,264	57,196
Pulp "	35	11,236	..	..	..	8,816	20,087
Fruit, preserved "	7,968	26,841	2,670	3,412	..	956	41,847
Pickles pints	2,161	1,057	385	250	56	11	3,920
Sauces "	6,170	6,601	690	2,249	199	51	15,960
VALUE.							
Jams £	584,781	523,825	78,211	175,568	12,707	305,832	1,680,924
Pulp £	355	187,000	..	..	..	155,420	342,775
Fruit, preserved £	207,823	700,104	60,974	63,689	..	19,755	1,052,345
Pickles £	72,818	35,593	14,705	9,564	2,743	550	135,973
Sauces £	198,533	212,371	15,518	75,038	6,768	1,516	509,744

15. *Confectionery Factories.*—(i) *Details for each State, 1921-22.* The growth of this industry will be apparent when it is stated that at the close of 1900 there were in New South Wales only 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, the plant and machinery in the former State being valued at £2,815, and in the latter at £19,070. Returns for 1921-22 are given hereunder :—

CONFECTIONERY FACTORIES, 1921-22.

Items.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Aus- tralia.
Number of factories	92	95	9	14	6	7	223
Number of employees	2,765	3,149	705	502	235	43	7,399
Actual horse-power of engines employed	1,649	2,897	170	300	263	34	5,313
Approximate value of land and buildings £	636,642	375,540	51,576	53,218	60,063	8,500	1,185,539
Approximate value of plant and machinery £	662,243	635,720	26,486	49,585	42,350	3,600	1,419,984
Total amount of wages paid during year £	421,260	464,173	79,261	49,755	27,029	5,319	1,046,797
Value of fuel used £	36,509	57,270	2,607	5,584	3,026	483	105,479
Value of raw material worked up £	1,533,692	1,275,932	109,008	180,411	92,480	29,157	3,220,680
Total value of output £	2,611,156	2,289,555	239,064	279,389	134,386	44,370	5,597,920
Value added in process of manufacture £	1,077,464	1,013,623	130,056	98,978	41,906	15,213	2,377,240

(ii) *Development in Australia, 1918 to 1921-22.* The growth of the confectionery industry during the past four years is exhibited in the following table :—

CONFECTIONERY FACTORIES.—AUSTRALIA, 1918 TO 1921-22.

Items.	1918.	1918-19.	1919-20.	1920-21.	1921-22.
Number of factories	147	156	181	200	223
Number of employees	5,856	6,710	7,323	7,137	7,399
Actual horse-power of engines employed	3,277	3,503	4,067	4,862	5,313
Approx. value of land and buildings £	554,099	775,670	878,305	1,041,380	1,185,539
Approx. value of plant and machinery £	419,986	562,475	664,452	1,278,882	1,419,984
Total amount of wages paid during year £	515,774	654,818	755,238	937,536	1,046,797
Value of fuel used £	63,674	74,995	75,084	93,975	105,479
Value of raw material worked up £	1,894,187	2,354,962	2,897,859	3,421,474	3,220,680
Total value of output £	2,969,573	3,597,148	4,559,437	5,419,985	5,597,920
Value added in process of manufacture £	1,075,386	1,242,186	1,661,578	1,998,511	2,377,240

The confectionery industry has expanded considerably during recent years, largely as a result of the stimulus afforded by the embargo placed on the importation of luxuries during the period of the war. The establishments engaged therein found employment for 7,399 persons in 1921-22, and the value of the output amounted to £5,597,920, or double the value of the production in 1918. The Australian market has been captured, and a growing export trade has been built up.

16. **Flour Mills.**—(i) *Details for States, 1921-22.* The following table shows the position of the flour-milling industry in each State in 1921-22 :—

FLOUR MILLS, 1921-22.

Items.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921. <i>a</i>	S. Aust. 1921-22. <i>a</i>	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories ..	62	45	11	39	17	9	183
Number of employees ..	1,204	997	288	549	322	122	3,482
Actual horse-power of engines employed ..	6,789	5,017	1,141	2,903	2,722	498	19,070
Approximate value of land and buildings .. £	568,959	249,295	83,259	151,185	141,885	24,950	1,219,533
Approximate value of plant and machinery .. £	714,796	360,540	104,137	201,159	126,526	28,775	1,535,933
Total amount of wages paid during year .. £	272,647	228,195	66,923	109,093	68,552	23,481	768,891
Value of fuel used .. £	57,828	49,459	9,207	26,408	12,319	2,882	158,103
Value of raw material worked up .. £	5,442,051	4,951,120	1,176,757	1,617,849	1,649,981	470,620	15,308,378
Total value of output .. £	6,227,607	5,759,281	1,354,677	1,951,624	1,826,038	534,882	17,634,109
Value added in process of manufacture .. £	785,556	808,161	157,920	333,775	176,057	64,262	2,325,731

(a) The manufacture of cornflour, oatmeal, etc., was also carried on in some of these establishments.

(ii) *Production of Flour and By-products, 1918 to 1921-22.* The production of flour by the mills in each State for the years 1918 to 1921-22 was as follows :—

FLOUR MILLS.—PRODUCTION OF FLOUR, 1918 TO 1921-22.

Year (b).	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>	Tons. <i>a</i>
1918 ..	355,343	311,450	45,589	135,882	119,876	17,121	985,761
1918-19 ..	377,107	347,841	45,589	138,734	119,876	17,121	1,046,268
1919-20 ..	348,691	353,683	49,300	134,727	141,516	22,311	1,050,228
1920-21 ..	244,818	260,032	54,383	98,557	120,125	23,596	801,511
1921-22 ..	336,572	308,532	54,694	108,893	82,148	20,613	911,452

(a) Tons of 2,000 lbs. (b) See general note on first page of this Chapter.

The total production of flour in Australia for the last year, viz., 911,452 tons, was valued at £14,735,785. In addition, 367,935 tons of bran and pollard, valued at £2,665,144, were made. The total quantity of wheat ground was 43,430,976 bushels.

17. **Sugar Mills.**—(i) *Details for 1921-22.* The following table shows the position of the cane-crushing branch of the sugar-making industry in Queensland and New South Wales in 1921-22. Sugar-cane is not grown in the other States. Details regarding the area, yield, etc., of sugar-cane will be found in Chapter XVII., "Agricultural Production."

SUGAR MILLS, 1921-22.

Items.	N.S.W. 1921-22.	Queensland. 1921.	Australia.
Number of factories	3	40	43
Number of employees	428	5,663	6,091
Actual horse-power of engines employed	1,324	27,716	29,040
Approximate value of land and buildings ..	£ 107,734	490,773	598,507
Approximate value of plant and machinery ..	£ 430,937	3,501,812	3,932,749
Total amount of wages paid during year ..	£ 74,452	1,063,507	1,137,959
Value of fuel used	£ 11,194	134,219	145,413
Value of raw material worked up	£ 343,932	5,828,854	6,172,786
Total value of output	£ 540,115	8,622,621	9,162,736
Value added in course of manufacture	£ 196,183	2,793,767	2,989,950

The products of the sugar mill are raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used for distillation, part is prepared for human consumption, part is turned into food-cake for cattle, and part is used for manuring land, but a considerable quantity is allowed to run to waste.

(ii) *Progress of Industry.* (a) *New South Wales.* The following table shows the progress of this industry in New South Wales since 1917-18 :—

SUGAR MILLS.—NEW SOUTH WALES, 1917-18 TO 1921-22.

Items.	1917-18.	1918-19.	1919-20.	1920-21.	1921-22.
Number of factories ..	3	3	3	3	3
Number of employees ..	367	432	419	437	428
Cane crushed .. cons	174,881	105,234	91,321	131,313	149,474
Sugar produced .. tons	19,875	12,278	10,837	15,124	17,806
Molasses produced .. gals.	975,770	586,925	494,600	649,800	940,700

The number of New South Wales mills has been reduced to three during recent years owing chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-cane has been turned into pasture in connexion with the dairying industry, but a revival in cane-growing in this district has led to a movement towards the erection of additional mills to treat the increased production.

(b) *Queensland.* Details for Queensland from 1911 onwards are given hereunder.

SUGAR MILLS.—QUEENSLAND, 1911 TO 1921.

Items.	1911.	1918.	1919.	1920.	1921.
Number of factories ..	49	42	32	34	43
Number of employees ..	4,295	5,214	4,098	4,851	6,091
Cane crushed .. tons	1,534,451	1,674,829	1,258,760	1,339,455	2,287,416
Sugar produced .. tons	173,296	189,978	162,136	167,401	282,198
Molasses—					
Sold to distillers and others .. gals.	2,393,669	1,662,454	916,291	985,951	2,738,795
Used as fodder .. gals.	789,564	1,602,962	1,517,167	1,381,041	2,053,338
Used as manure .. gals.	223,000	109,000	141,175	24,000	78,720
Run to waste or burnt ^a .. gals.	1,847,333	3,501,668	3,347,655	3,050,901	4,866,272
In Stock .. gals.	1,197,626	923,307	933,542	733,974	997,274
Total Molasses ^a .. gals.	6,451,192	7,799,391	6,855,830	6,175,867	10,734,399

(a) Quantity recorded; large quantities run to waste of which no record is kept.

18. Sugar Refineries.—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1921–22 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries, an average number of 1,740 hands was employed during the year. The approximate value of land and buildings was £654,548, of plant and machinery, £1,306,085; and the total amount of wages paid during the year was £374,653. The value of all materials used in sugar refineries was £9,803,676, while the total output reached £12,121,857. The amount of crude sugar used was 271,810 tons, and of refined sugar produced 261,189 tons, valued at £11,946,290.

19. Breweries.—(i) *Details for each State, 1921–22.* The following table gives particulars concerning breweries in each State :—

BREWERIES, 1921–22.

Items.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.(a)	Tas. 1921.	Australia.
Number of breweries	17	15	10	8	10	4	64
Number of employees	1,225	1,053	536	376	488	136	3,814
Actual horse-power of engines employed	3,432	4,494	1,659	1,125	1,208	214	12,132
Approximate value of land and buildings £	755,191	402,445	181,372	103,706	172,307	61,450	1,676,471
Approximate value of plant and machinery £	914,667	514,760	212,095	155,972	143,204	53,001	1,993,699
Total amount of wages paid during year £	346,599	278,319	138,272	105,992	133,582	29,666	1,032,430
Value of fuel used £	81,621	67,391	20,495	19,978	19,256	6,062	214,803
Value of raw material worked up £	1,230,097	982,425	228,127	274,673	308,322	63,816	3,087,460
Total value of output £	2,492,122	2,200,882	714,889	512,748	661,488	216,094	6,798,223
Value added in process of manufacture £	1,262,025	1,218,457	486,762	238,075	353,166	152,278	3,710,763

(a) Includes malting.

(ii) *Development in Australia, 1918 to 1921–22.* The following table shows the progress of this industry during the past four years :—

BREWERIES.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of breweries	72	68	68	67	64
Number of employees	3,268	3,355	3,710	3,752	3,814
Actual horse-power of engines used	9,602	9,922	18,091	10,833	12,132
Approx. value of land and buildings £	1,676,567	1,692,220	1,109,813	1,619,027	1,676,471
Approx. value of plant and machinery £	1,600,734	1,654,600	1,243,272	1,882,956	1,993,699
Total amount of wages paid £	632,076	668,579	831,779	937,563	1,032,430
Value of fuel used £	120,381	128,650	160,609	195,135	214,803
Value of raw material worked up £	1,959,232	2,215,487	2,760,601	3,341,707	3,087,460
Value of final output £	4,741,744	5,184,649	6,631,409	6,991,770	6,798,223
Value added in process of manufacture £	2,782,512	2,969,162	3,870,808	3,650,063	3,710,763

The main feature in the history of the brewing industry, which was established at an early date in Australia, has been the change from the small local brewery in every township of moderate size to the large centralized city brewery. This, however, has not been so much in evidence during the period embraced in the above table, the reduction of the number of establishments during recent years being mainly due to amalgamations. The total value of output of breweries in Australia increased from £4,741,744 in 1918 to £6,798,223 in 1921–22, while the quantity of ale and stout brewed during the same period increased from 62,828,518 to 67,331,541 gallons. The average production per head of mean population decreased slightly from 12.58 gallons per head in 1918 to 12.25 gallons in 1921–22.

iii) *Materials Used and Production.* The table below shows the quantity of raw materials used and the quantity and value of ale and stout brewed in each State during the year 1921-22.

BREWERIES.—MATERIALS USED AND PRODUCTION, 1921-22.

Particulars.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tasmania. 1921.	Australia
RAW MATERIALS USED.							
Malt .. bushels	837,267	688,094	225,748	167,468	169,944	68,750	2,157,271
Hops .. lbs.	796,258	717,952	289,283	181,737	187,224	103,630	2,276,084
Sugar .. cwt.	101,240	107,160	35,675	27,784	27,927	6,850	306,636

RAW MATERIALS USED PER 1,000 GALLONS OF ALE AND STOUT PRODUCED.

Malt .. bushels	33.82	30.74	30.19	29.75	30.72	44.33	32.04
Hops .. lbs.	32.16	32.07	38.69	32.29	33.84	66.83	33.80
Sugar .. cwt.	4.09	4.79	4.77	4.94	5.05	4.42	4.55

ALE AND STOUT BREWED.

Quantity	gallons	24,756,286	22,387,672	7,476,595	5,628,276	5,531,954	1,550,758	67,331,541
Value(a)	£	2,478,946	2,200,882	714,889	508,272	643,122	212,409	6,758,520

(a) Exclusive of excise duty.

20. *Distilleries.*—The subjoined table gives particulars of distilleries in four States. There are no distilleries in Western Australia or Tasmania.

DISTILLERIES, 1921-22.

Items.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	Australia.
Number of distilleries	5	10	4	25	44
Number of employees	45	118	71	154	388
Actual horse-power of engines employed ..	255	369	180	349	1,153
Approx. value of land and buildings ..	£ 24,468	171,070	13,553	57,069	266,160
Approx. value of plant and machinery ..	£ 80,705	111,840	101,597	68,904	363,046
Total amount of wages paid during year ..	£ 10,312	21,672	16,422	21,996	70,402
Value of fuel used	£ 4,824	8,803	5,589	7,761	26,977
Value of raw materials worked up	£ 64,425	59,310	23,689	153,815	301,239
Total value of output	£ 102,468	113,645	81,401	220,159	517,673
Value added in process of manufacture ..	£ 38,043	54,335	57,712	66,344	216,434

The quantity of rum distilled during the year was 108,787, of whisky 103,001, of brandy 155,478, of gin 37,995, of methylated spirits 1,146,496, and of other spirits, including rum distilled in Queensland separate particulars for which are not available. 1,962,315 proof gallons. The materials used comprised 540,592 cwt. of molasses, and 4,321,617 gallons of wine.

21. *Tobacco, etc., Factories.*—(i) *Details for each State, 1921-22.* During the year 1921-22 there were thirty-six establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1921-22.

Items.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S.A. 1921-22.	W.A. 1921.	Tas. 1921.	Australia.
Number of factories	15	15	2	1	3	..	36
Number of employees	2,299	1,935	42	20	44	..	4,340
Actual horse-power and engines employed ..	684	495	22	..	2	..	1,203
Approx. value of land and buildings ..	£ 286,735	191,730	a	a	4,361	..	6490,414
Approx. value of plant and machinery ..	£ 259,798	145,530	a	a	1,400	..	6413,119
Total amount of wages paid during year ..	£ 369,854	344,398	a	a	3,561	..	6724,919
Value of fuel used	£ 13,814	6,221	a	a	18	..	620,354
Value of raw material worked up	£ 3,338,418	1,568,891	a	a	6,200	..	64,925,066
Total value of output	£ 4,319,584	2,351,720	a	a	13,004	..	66,710,757
Value added in process of manufacture ..	£ 981,166	782,829	a	a	6,804	..	61,785,691

(a) Not available for publication.

(b) Including Queensland and South Australia.

(ii) *Development in Australia.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The imports into Australia during 1921–22 comprised—manufactured tobacco 948,586 lbs., cigars 54,557 lbs., and cigarettes 122,806 lbs., while the quantities manufactured in Australian factories were respectively 14,216,120 lbs., 507,541 lbs., and 4,907,422 lbs. The following tables show the development of the tobacco manufacturing industry in Australia during recent years :—

**TOBACCO, CIGAR, AND CIGARETTE FACTORIES.—AUSTRALIA,
1918 TO 1921–22.**

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	37	37	37	40	36
Number of employees	3,920	3,908	4,489	4,525	4,340
Actual horse-power of engines used ..	934	948	1,144	1,186	1,203
Approx. value of land and buildings £	413,167	420,124	432,247	490,494	490,414
Approx. value of plant and machinery £	265,150	270,953	313,619	369,267	413,119
Total amount of wages paid ..	466,520	490,172	633,694	706,218	724,919
Value of fuel used	12,347	13,147	16,200	18,201	20,354
Value of raw material worked up ..	2,578,758	3,110,373	4,559,110	5,091,272	4,925,066
Value of final output	3,694,246	4,306,140	6,466,649	6,709,298	6,710,757
Value added in process of manufacture £	1,115,488	1,195,767	1,907,539	1,618,026	1,785,691

LEAF USED AND PRODUCTION.

Leaf used 1,000 lbs.	a12,957	a13,351	16,137	16,636	16,867
Tobacco made "	a11,011	a10,991	13,158	13,268	14,216
Cigars "	a427	a441	552	544	508
Cigarettes "	a3,301	a3,726	4,837	5,324	4,907

(a) Incomplete.

(iii) *Quantities of Leaf Used and Production.* The following table shows the quantities of imported and Australian-grown leaf used, and the quantity of goods produced in tobacco factories during 1921–22 :—

TOBACCO, ETC., FACTORIES.—LEAF USED AND PRODUCTION, 1921–22.

Particulars.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Australia. (b)
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TOBACCO LEAF USED (,000 OMITTED).

Australian leaf lbs.	795	536	} a	a	a {	1,386
Imported leaf lbs.	10,204	5,251				15,481

PRODUCTION (,000 OMITTED).

Manufactured tobacco lbs.	7,803	6,344	} a	a	a {	14,216
Cigars lbs.	130	365				508
Cigars No.	10,920	33,894	} ..	..	..	46,397
Cigarettes lbs.	4,553	354				4,907
Cigarettes No.	2,011,252	152,909	..	..	..	2,164,161

(a) Not available for publication.

(b) Including particulars for Queensland, South Australia, and Western Australia.

22. **Woollen, Cotton, and Tweed Mills.**—(i) *Details for each State, 1921–22.* The manufacture of woollens and tweeds was established in Australia at an early period in its history, and was under Government control, the first record in New South Wales dating back to 1801, when a few blankets were made by the convicts; the first record in Victoria was in 1867. There are no woollen mills in Western Australia. The following table, which gives particulars for 1921–22 shows that the industry is now well established:—

WOOLLEN, COTTON, AND TWEED MILLS, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W.A. 1921.	Tas. 1921.	Australia.
Number of factories	9	19	2	2	..	4	36
Number of employees	1,570	3,756	300	235	..	240	6,101
Actual horse-power of engines employed	3,004	7,390	610	289	..	337	11,630
Approx. value of land and buildings £	247,831	619,365	<i>a</i>	<i>a</i>	..	27,300	694,057
Approx. value of plant and machinery	£ 447,529	1,245,575	<i>a</i>	<i>a</i>	..	64,000	5,184,919
Total amount of wages paid during year	£ 227,540	526,009	<i>a</i>	<i>a</i>	..	24,309	684,263
Value of fuel used	£ 23,395	76,409	<i>a</i>	<i>a</i>	..	2,458	610,514
Value of raw material worked up	£ 648,111	1,150,361	<i>a</i>	<i>a</i>	..	35,680	5,194,050
Total value of output	£ 1,262,833	2,482,761	<i>a</i>	<i>a</i>	..	112,723	5,409,608
Value added in process of manufacture	£ 614,722	1,332,400	<i>a</i>	<i>a</i>	..	77,043	5,215,678

(a) Information not available for publication.

(b) Including Queensland and South Australia.

(ii) *Development in Australia, 1918 to 1921–22.* The progress of woollen and tweed milling in Australia during the last four years is shown in the following table:—

WOOLLEN, COTTON, AND TWEED MILLS.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	25	25	29	34	36
Number of employees	3,817	4,087	5,029	5,783	6,101
Actual horse-power of engines used	7,114	7,212	8,705	9,617	11,630
Approx. value of land and buildings	£ 355,931	434,735	626,822	751,858	940,578
Approx. value of plant and machinery	£ 573,902	721,418	1,192,913	1,378,903	1,849,919
Total amount of wages paid	£ 360,466	398,641	560,149	762,131	842,683
Value of fuel used	£ 49,339	50,818	75,722	93,691	109,514
Value of raw material worked up	£ 1,141,962	1,249,094	1,865,477	2,090,892	1,940,050
Value of final output	£ 2,024,343	2,330,253	3,290,511	4,241,964	4,096,808
Value added in process of manufacture	£ 882,381	1,081,159	1,425,034	2,151,072	2,156,758

(iii) *Quantity and Value of Production.* The production consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured in Australia during 1921–22 was 5,656,132 yards. In New South Wales 2,514,167 yards of tweed and cloth, and in Victoria 1,872,512 yards were manufactured. The production of flannel amounted to 6,765,551 yards, while blankets, shawls, and rugs to the number of 939,636 were manufactured.

Cotton ginning has been carried on intermittently in the Northern States, and the recent development in cotton growing has led to the establishment of modern ginning plants at convenient centres in Queensland.

23. **Boot Factories.**—(i) *Details for each State, 1921–22.* Among the manufactures of Australia the boot and shoe industry holds an important place in regard to employment afforded and extent of output. The following table gives particulars of this industry for each State during 1921–22 :—

BOOT AND SHOE FACTORIES, 1921–22.

Items.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	302	334	36	38	20	14	744
Number of employees	5,940	11,714	1,283	829	345	279	20,390
Actual horse-power of engines employed	1,702	2,664	314	263	108	79	5,130
Approx. value of land and buildings £	701,066	735,035	51,368	67,431	39,133	18,748	1,612,781
Approx. value of plant and machinery £	225,622	395,390	33,154	33,737	14,258	9,288	711,449
Total amount of wages paid during year £	916,641	1,760,589	176,625	115,549	48,926	31,795	3,050,125
Value of fuel used £	13,256	30,375	1,806	2,368	1,039	400	49,244
Value of raw material worked up £	1,524,027	3,109,863	295,144	213,188	93,358	55,447	5,291,027
Total value of output £	2,957,632	6,043,172	587,339	370,956	169,338	112,842	10,241,279
Value added in process of manufacture £	1,433,605	2,933,309	292,195	157,768	75,980	57,395	4,950,252

(ii) *Development in Australia, 1918 to 1921–22.* The progress of the industry in the last four years is shown in the following table :—

BOOT AND SHOE FACTORIES.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	432	438	532	592	744
Number of employees	15,499	15,960	17,987	16,573	20,390
Actual horse-power of engines used	3,742	3,998	4,462	4,746	5,130
Approx. value of land and buildings £	790,573	849,759	1,017,437	1,258,361	1,612,781
Approx. value of plant and machinery £	465,020	475,983	530,327	617,721	711,449
Total amount of wages paid £	1,613,728	1,792,001	2,232,746	2,198,586	3,050,125
Value of fuel used £	29,055	31,852	41,206	41,077	49,244
Value of raw material worked up £	3,913,893	4,451,458	6,661,483	5,208,627	5,291,027
Value of final output £	6,410,464	7,120,164	10,206,965	8,895,411	10,241,279
Value added in process of manufacture £	2,496,571	2,668,706	3,545,482	3,686,784	4,950,252

The above table shows consistent progress in the manufacture of boots and shoes in Australia from 1918 to 1921–22. During this period the number of employees increased by 4,891, and the value of the final output rose from £6,410,464 to £10,241,279, while the increase in the number of boots and shoes made amounted to 1,585,093 pairs.

(iii) *Quantity and Value of Production.* The number and value of boots, shoes, and slippers made at factories in each State are shown in the following table :—

BOOT AND SHOE FACTORIES.—OUTPUT, 1921–22.

Particulars.	N.S.W. 1921–22.	Vic. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
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QUANTITY (,000 OMITTED).

Boots and shoes .. pairs	3,859	7,571	783	547	230	164	13,154
Slippers .. pairs	583	904	24	9	3	1	1,524
Uppers(a) .. pairs	43	42	3	9	(b)	6	103

VALUE.

Boots and shoes .. £	2,548,479	5,000,116	542,298	324,781	144,603	103,512	8,663,789
Slippers .. £	114,710	177,789	4,538	3,342	1,566	389	302,334
Uppers(a) .. £	16,428	15,814	1,726	4,427	(b)	1,708	40,103

(a) Made for other than factory use.

(b) Included with slippers.

24. **Clothing (Tailoring and Slop) Factories.**—(i) *Details for each State, 1921–22.* The importance of this industry in the several States is shown in the following table :—

CLOTHING (TAILORING AND SLOP) FACTORIES, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	498	497	132	142	67	43	1,379
Number of employees	11,128	9,421	2,993	2,404	1,050	620	27,616
Actual horse-power of engines employed	603	502	86	108	65	22	1,386
Approximate value of land and buildings £	1,638,111	809,055	313,577	239,757	136,005	94,289	3,230,794
Approximate value of plant and machinery £	116,401	92,165	40,602	26,181	10,897	4,207	290,453
Total amount of wages paid during year £	1,339,031	1,076,033	339,576	244,957	123,056	66,749	3,189,402
Value of fuel used £	16,036	19,225	5,242	5,858	2,271	893	49,525
Value of raw material worked up £	2,404,050	2,148,957	670,655	402,542	247,700	105,088	5,978,992
Total value of output £	4,185,142	3,905,486	1,256,620	796,529	428,432	209,973	10,782,182
Value added in process of manufacture £	1,781,092	1,756,529	585,965	393,987	180,732	104,885	4,803,190

(ii) *Development in Australia, 1918 to 1921–22.* The development in the tailoring and slop branch of the clothing industry during the past four years, when prices were extremely high, may be accepted as an indication of the general prosperity of the community. The number of employees increased by nearly 2,500, and the value of the output rose from £6,924,820 in 1918 to £10,782,182 in 1921–22. The number of persons engaged in the industry during 1921–22, however, is still 3,000 less than the highest point reached before the war. Details for the past five years are as follows :—

CLOTHING (TAILORING AND SLOP) FACTORIES.—AUSTRALIA, 1918 TO 1921–22.

Items.	1918.	1918–19.	1919–20.	1920–21.	1921–22.
Number of factories	1,205	1,206	1,219	1,272	1,379
Number of employees	25,188	25,013	26,190	25,803	27,616
Actual horse-power of engines used	1,379	1,313	1,287	1,408	1,386
Approx. value of land and buildings £	2,182,326	2,224,646	2,402,571	2,753,171	3,230,794
Approx value of plant and machinery £	206,954	202,868	220,903	263,067	290,453
Total amount of wages paid £	1,954,356	2,007,826	2,556,112	2,859,971	3,189,402
Value of fuel used £	34,889	37,181	40,941	44,042	49,525
Value of raw material worked up £	3,759,152	4,451,166	5,566,172	6,020,891	5,978,992
Total value of output £	6,924,820	7,807,130	9,957,672	10,679,919	10,782,182
Value added in process of manufacture £	3,165,668	3,355,964	4,391,500	4,659,028	4,803,190

25. **Dressmaking and Millinery Establishments.**—(i) *Details for each State, 1921–22.* Particulars of dressmaking and millinery establishments are given in the following table :—

DRESSMAKING AND MILLINERY ESTABLISHMENTS, 1921–22.

Items.	N.S.W. 1921–22.	Victoria. 1921–22.	Q'land. 1921.	S. Aust. 1921–22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	245	501	49	42	44	29	910
Number of employees	4,190	9,343	1,105	988	583	363	16,572
Actual horse-power of engines employed	195	448	15	12	32	7	709
Approximate value of land and buildings £	624,237	782,170	50,433	61,355	49,353	11,880	1,579,428
Approximate value of plant and machinery £	36,695	89,825	8,106	5,829	5,438	921	146,814
Total amount of wages paid during year £	386,351	848,249	81,356	74,357	53,400	23,353	1,467,066
Value of fuel used £	2,759	11,988	1,026	636	548	250	17,207
Value of raw material worked up £	623,584	1,731,707	108,987	116,768	87,566	27,222	2,695,834
Total value of output £	1,213,220	3,142,365	214,004	230,079	143,565	57,179	5,000,412
Value added in process of manufacture £	589,636	1,410,658	105,017	113,311	55,999	29,957	2,304,578

(ii) *Development in Australia, 1918 to 1921-22.* The development of dressmaking and millinery establishments in Australia during the past four years is shown in the following table :—

**DRESSMAKING AND MILLINERY ESTABLISHMENTS.—AUSTRALIA,
1918 TO 1921-22.**

Items.	1918.	1918-19.	1919-20.	1920-21.	1921-22.
Number of factories	920	876	854	860	910
Number of employees	18,575	17,683	17,954	16,856	16,572
Actual horse-power of engines used ..	648	623	636	673	709
Approximate value of land and buildings £	1,087,567	1,159,550	1,167,568	1,392,868	1,579,428
Approximate value of plant and machinery £	111,622	116,093	128,646	150,475	146,814
Total amount of wages paid	£ 986,440	1,044,263	1,237,811	1,350,596	1,467,066
Value of fuel used	£ 14,227	14,125	15,070	15,864	17,207
Value of raw material worked up ..	£ 1,884,886	2,051,177	2,685,382	2,782,042	2,695,834
Value of final output	£ 3,405,574	3,634,695	4,882,988	4,951,519	5,000,412
Value added in process of manufacture £	1,520,688	1,585,518	2,197,606	2,169,477	2,304,578

Though the number of persons engaged in dressmaking and millinery establishments decreased by 2,000, the value of the output rose from £3,405,574 in 1918 to £5,000,412 in 1921-22, and notwithstanding the difference in prices during the years quoted, the volume of output has greatly increased.

26. Electrotyping, Stereotyping, Printing, and Binding Works.—(i) *Details for each State, 1921-22.* Printing ranks high in importance among the industries of Australia. It affords employment for nearly 24,000 employees, and pays over £4,500,000 in salaries and wages. During 1921-22 the total value of the output amounted to £14,408,689.

The following table gives particulars of these industries in each State for the year 1921-22 :—

**ELECTROTYPING, STEREOTYPING, PRINTING, AND BINDING ESTABLISHMENTS,
1921-22.**

Items.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	442	428	133	76	71	25	1,175
Number of employees	9,179	8,418	2,886	1,486	1,164	859	23,992
Actual horse-power of engines employed	5,552	4,245	1,548	977	682	253	13,257
Approximate value of land and buildings	£ 1,930,916	1,096,950	556,065	323,249	247,757	64,610	4,219,547
Approximate value of plant and machinery	£ 1,726,258	1,256,810	366,106	216,396	206,487	77,838	3,849,895
Total amount of wages paid during year	£ 1,751,092	1,591,921	545,241	273,210	242,546	153,155	4,557,165
Value of fuel used	£ 46,355	48,210	20,594	9,514	6,977	3,538	135,188
Value of raw materials worked up	£ 2,608,630	2,378,952	581,871	397,339	322,781	145,359	6,434,932
Total value of output	£ 5,436,519	5,397,287	1,623,963	837,485	737,164	376,271	14,408,689
Value added in process of manufacture	£ 2,827,889	3,018,335	1,042,092	440,146	414,383	230,912	7,973,757

(ii) *Development in Australia, 1918 to 1921-22.* The development of electrotyping, stereotyping, printing, and binding in Australia since 1918 is shown in the following table :—

**ELECTROTYPING, STEREOTYPING, PRINTING AND BINDING ESTABLISHMENTS.—
AUSTRALIA, 1918 TO 1921-22.**

Items.	1918.	1918-19.	1919-20.	1920-21.	1921-22.
Number of establishments	1,106	1,101	1,125	1,132	1,175
Number of employees	20,714	20,852	22,149	23,053	23,992
Actual horse-power of engines used ..	11,086	11,444	12,022	12,534	13,257
Approximate value of land and buildings £	3,449,394	3,474,345	3,661,054	3,976,321	4,219,547
Approximate value of plant and machinery £	2,683,781	2,722,729	3,087,143	3,392,044	3,849,895
Total amount of wages paid	£ 2,712,472	2,861,412	3,327,499	4,083,732	4,557,165
Value of fuel used	£ 89,663	94,257	105,093	126,657	135,188
Value of raw materials worked up ..	£ 3,690,419	4,386,629	5,003,681	6,526,081	6,434,932
Value of final output	£ 8,537,815	9,381,799	10,906,244	13,845,574	14,408,689
Value added in process of manufacture £	4,847,396	4,995,170	5,902,563	7,319,493	7,973,757

Since 1918 the expansion in this industry has necessitated the employment of 3,278 additional workers and 2,171 horse-power units, while the values of the raw materials used and the final output have almost doubled.

27. Coach and Wagon Building Works.—This industry forms the principal branch of manufacture in Class XI. The particulars given in the subjoined table include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1921-22.

Items.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	170	303	60	78	47	28	686
Number of employees	1,461	2,639	453	634	338	247	5,772
Actual horse-power of engines employed	1,062	914	288	479	184	97	3,024
Approximate value of land and buildings £	258,495	319,815	62,780	83,165	64,296	32,152	820,703
Approximate value of plant and machinery £	104,923	90,435	22,701	30,939	14,840	6,785	270,623
Total amount of wages paid during year £	235,376	425,679	64,217	103,390	50,368	26,590	905,620
Value of fuel used £	9,732	14,366	1,264	5,186	3,528	1,485	35,561
Value of raw material worked up £	308,075	492,308	78,002	122,310	63,144	55,730	1,119,569
Total value of output £	670,132	1,147,444	184,850	264,673	143,969	100,075	2,511,143
Value added in process of manufacture £	362,057	655,136	106,848	142,363	80,825	44,345	1,391,574

28. Furniture and Cabinet Making and Billiard Table Making Factories.—These industries constitute the principal manufactures in Class XIII. The following table gives particulars for each State :—

FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING FACTORIES, 1921-22.

Items.	N.S.W. 1921-21.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	230	282	78	43	39	19	691
Number of employees	3,229	2,719	1,122	846	518	336	8,770
Actual horse-power of engines employed	2,591	2,018	891	987	511	249	7,247
Approximate value of land and buildings £	573,263	429,630	135,842	89,710	88,275	25,883	1,342,603
Approximate value of plant and machinery £	165,796	106,785	53,995	31,450	28,473	10,543	397,042
Total amount of wages paid during year £	581,703	422,900	182,728	140,458	102,431	49,527	1,479,747
Value of fuel used £	14,615	11,075	5,332	3,648	2,459	976	38,105
Value of raw material used £	764,128	585,007	249,076	143,495	115,286	30,639	1,887,631
Total value of output £	1,554,298	1,247,508	553,069	329,346	243,474	102,409	4,030,104
Value added in process of manufacture £	790,170	662,501	303,993	185,851	128,188	71,770	2,142,473

29. Electric Light and Power Works.—Particulars of the electric light and power works of Australia are given in the subjoined table. In 1918 there were 257 establishments employing 3,533 hands, whose salaries and wages amounted to £605,817; in 1921-22 the figures had increased to 266 establishments, 4,327 hands, salaries and wages £1,086,734, while the production of electric light and power rose during the four years from 461,416,296 to 672,954,729 British units.

ELECTRIC LIGHT AND POWER WORKS, 1921-22.

Items.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	113	84	14	12	28	15	266
Number of employees	1,439	1,350	509	590	223	216	4,327
Actual horse-power of engines employed	122,707	57,481	24,673	25,341	28,353	21,263	279,818
Approximate value of land and buildings £	1,623,638	558,795	80,449	202,176	180,210	10,430	2,655,698
Approximate value of plant and machinery £	3,407,721	3,166,750	516,803	724,070	500,791	804,359	9,120,494
Total amount of wages paid during year £	385,376	334,805	120,035	140,366	54,789	51,363	1,086,734
Value of fuel used £	707,675	386,722	77,379	144,141	117,641	7,762	1,441,320
Total value of output £	2,101,102	1,407,268	541,786	435,245	266,645	174,543	4,926,589

30. **Gas and Coke Works.**—(i) *Details for each State, 1921-22.* Gas works are in operation in nearly all the chief towns in Australia. In New South Wales there are fourteen and in Queensland two coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State for the year 1921-22 :—

GAS AND COKE WORKS, 1921-22.

Items.	N.S.W. 1921-22.	Vic. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
Number of factories	60	47	18	6	4	3	138
Number of employees	2,624	2,323	573	549	68	309	6,446
Actual horse-power of engines employed	7,964	1,981	588	890	72	3,035	14,530
Approximate value of land and buildings £	1,099,898	500,855	190,349	a	30,644	a	b1,909,408
Approximate value of plant and machinery £	3,263,279	1,458,105	1,047,054	a	66,958	a	b6,593,925
Total amount of wages paid during year £	576,135	612,258	140,318	a	18,142	a	b1,515,296
Value of fuel used £	119,040	7,117	9,785	a	6,754	a	b 173,905
Value of raw material used £	1,606,697	767,190	143,263	a	38,387	a	b2,758,057
Total value of output £	3,366,577	1,967,012	463,332	a	87,680	a	b6,479,353
Value added in process of manufacture £	1,759,880	1,199,822	320,069	a	49,293	a	b3,721,296

(a) Information not available for publication.

(b) Including South Australia and Tasmania.

(ii) *Coal Used and Production, 1921-22.* The following table shows the quantity and value of the production of gas and coke works in each State during the year 1921-22 :—

GAS AND COKE WORKS.—COAL USED AND PRODUCTION, 1921-22.

Particulars.	N.S.W. 1921-22.	Victoria. 1921-22.	Q'land. 1921.	S. Aust. 1921-22.	W. Aust. 1921.	Tas. 1921.	Australia.
COAL USED.							
Coal tons	1,236,714	383,092	102,955	a	14,158	a	b1,824,950
PRODUCTS.							
Gas .. 1,000 cubic feet	8,330,818	5,150,380	1,168,813	a	202,088	a	b15,981,920
Coke tons	779,930	239,755	58,619	a	6,633	a	b1,141,644
VALUE.							
Gas £	1,774,757	1,287,845	399,076	a	70,416	a	b3,934,430
Coke £	1,008,946	210,000	51,038	a	10,789	a	b1,378,146

(a) Not available for publication.

(b) Including South Australia and Tasmania.

In order to cope with the general industrial expansion, the production of gas increased from 13,193,834,000 cubic feet in 1918 to 15,981,920,000 cubic feet in 1921-22, while the output of coke increased by 200,000 tons during the same period.

CHAPTER XXIII.

WATER CONSERVATION AND IRRIGATION.

§ 1. Artesian Water.

1. **General.**—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in Australia so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the chapter dealing with Local Government. Interstate Conferences on artesian water were held in 1912, 1914, and 1921, when combined Governmental action was agreed upon with reference to delimitation of the artesian basins, hydrographic surveys, analyses and utilization of artesian water, etc. (See map on page 897.)

2. **The Great Australian Artesian Basin.**—In speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shown approximately by the map on page 897) is said to be the largest yet discovered, and measures about 602,000 square miles, of which 376,000 square miles are in Queensland, 118,000 square miles in South Australia, 83,000 square miles in New South Wales, and 25,000 square miles in the Northern Territory. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. A description of the basin and its geological formation will be found in previous issues of the Year Book (see No. 6, p. 569).

3. **The Western Australian Basins.**—The Western Australian Basins fall naturally within five distinct groups, viz., the Eucla Basin, in the extreme south-east of the State, extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain Basin, west of the Darling Range; the North-West Basin, between the Murchison and Ashburton Rivers; the Gulf Basin, between Cambridge Gulf and Queen's Channel; and the Desert Basin, between the De Grey and Fitzroy Rivers.

The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form the Eucla artesian water area. Where boring operations have been undertaken, the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which, so far, have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the Coastal Plain Basin to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

4. **The Murray River Basin.**—The Murray River basin extends over south-western New South Wales, north-western Victoria, and south-eastern South Australia. It is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly

supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation. On the Victorian side bores have been put down, and water has been struck at various levels.

5. **Plutonic or Meteoric Waters.**—In previous Year Books will be found a statement of the theory of Professor Gregory* as to the origin of the water in the Australian artesian basins together with the objections held thereto by a former Government Geologist of New South Wales.† (See Year Book No. 6, p. 570.)

6. **Artesian and Sub-Artesian Bores.**—(i) *General.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Northern Territory:—

ARTESIAN AND SUB-ARTESIAN BORES, 1921-22.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust. (c)	W. Aust.	N. Ter. (e)	Total.
Bores existing .. No.	507	337	2,829	146	182	159	4,160
Total depth bored .. feet	845,652	91,361	d3,521,978	114,625	164,984	47,158	4,735,758
Daily flow .. 1,000 gals.	a84,590	b	a393,073	a13,204	56,206	f	b
Depth at which artesian water was struck—							
Maximum .. feet	4,338	700	6,000	4,850	c 2,275	1,760	6,000
Minimum .. feet	89	150	10	55	c 39	60	10
Temperature of flow—							
Maximum .. °Fahr.	140	b	210	208	c 140	b	210
Minimum .. °Fahr.	72	b	81	82	c 75	b	72

(a) Flowing bores only. (b) Not available. (c) Government bores only. (d) Total depth of all bores. (e) 1920-21 figures. (f) Average pumping supply 32,000 gallons per day.

(ii) *New South Wales.*—(a) *Artesian Water Supply.* The New South Wales portion of the great Australian basin, comprising approximately 83,000 square miles, is situated in the north-western portion of the State. Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884.

The following statement shows the extent of the work successfully carried out by the Government and by private owners up to 30th June, 1922:—

EXISTING ARTESIAN BORES.—NEW SOUTH WALES, 1922.

Bores.	Flowing.	Pumping.	Total.	Total Depth.
For Public Watering-places, Artesian Wells, etc.	125	36	161	332,858
For Country Towns Water Supply	3	1	4	6,533
For Improvement Leases	34	3	37	58,412
Total Government Bores	162	40	202	397,803
Private Bores	223	82	305	447,849

* See J. W. Gregory, F.R.S., D.Sc.: "The Dead Heart of Australia," London, John Murray, 1906; "The Flowing Wells of Central Australia," Geogr. Journ., July and August, 1911.

† E. F. Pittman, A.R.S.M., formerly Government Geologist of New South Wales: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory," (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907); "The Great Australian Artesian Basin," Sydney, 1914; "The Composition and Porosity of the Intake Beds of the Great Australian Artesian Basin," Sydney, 1915.

The average depth is 1,969 feet in the case of Government bores, and of private bores 1,468 feet, and it ranges from 89 to 4,338 feet. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4,338 feet and a present outflow of 908,090 gallons; and at Dolgelly, in the Parish of Carenga, in County Stapylton, with a depth of 4,086 feet, and a present discharge of 534,406 gallons per day. The largest flow at the present time is that at the Wirrah bore, in the County of Benarba, which yields 1,062,123 gallons a day, and has a depth of 3,578 feet.

Of the 555 bores which have been sunk, 385 are flowing, and give an aggregate discharge of 84,589,733 gallons per day; 122 bores give a pumping supply, the balance of 48 being failures; the total depth bored represents 906,594 feet.

The flow from 79 bores is utilized for supplying water for stock on holdings served in connexion with Bore Water Trusts or Artesian Districts under the Water Act of 1912. The total flow from these bores amounts to 34,712,398 gallons per day, watering an area of 4,556,024 acres by means of 2,820 miles of distributing channels. The average rating by the Bore Trusts to repay the capital cost with 4 per cent. interest in twenty-eight years, is 1.5d. per acre, including the cost of maintenance and administration.

In the majority of cases the remaining bores are used by pastoralists for stock-watering purposes only, but in a few instances the supply is utilized in connexion with country towns.

The watering of the north-western country by means of bore water has largely increased the carrying capacity of the land; and, what is of perhaps greater importance, it has made comparatively small pastoral holdings practicable in country previously confined almost entirely to the operations of companies holding immense areas.

It having been determined that multiplicity of bores is the chief factor governing the annual decrease in bore flows, and also that limiting the discharge from a bore will prolong its flowing life, action has been taken to prevent any waste by controlling the bore flow to actual requirements. It is confidently anticipated that this action will materially reduce the rate of decrease in the future.

(b) *Private Artesian Bores.* Much has been done in the way of artesian boring by private enterprise. As far as can be ascertained, 329 private bores have been undertaken in New South Wales, of which 24 were failures. The yield of the flowing bores is estimated at 37.3 million gallons per day. No data are available regarding the pumping bores.

(c) *Shallow Boring.* The scheme described in Official Year Book No. 9 (p. 520) for assisting settlers by sinking shallow bores has met with considerable success.

Operations commenced with one plant only, but the number has been increased gradually until 28 plants are at work.

A large number of applications from settlers wishing to take advantage of the liberal conditions offered under the regulations has been received, and further applications are coming to hand daily, consequently the plants now in use will probably be insufficient to cope with the demand. Out of 950 bores put in hand up to 30th June, 1922, 175 have proved failures.

There can be no question that the added value of the holdings represented by the bores already put down is considerably in excess of their cost, and as fairly conclusive evidence of this, it might be stated that in several instances the Government Savings Bank has, on completion of a bore, made the settler a sufficient advance to enable him to pay the total cost in cash.

In addition to the work carried out under the Shallow Boring Regulations outlined above, shallow boring plants have sunk 22 bores in the Pilliga scrub and on Crown lands for the Lands and Forestry Departments.

The fact that of the bores put down in the Pilliga scrub, 52 are giving a flowing supply, adds much to their value, and is of special interest as indicating the possibility of tapping a small and hitherto unknown artesian basin.

(iii) *Victoria.* Victoria lies altogether outside the Great Australian Artesian Basin, and as water is generally available from surface or shallow underground supplies, there has not been much occasion for artesian boring. As early as 1880, however, an artesian well

was bored at Sale, which gave a large supply of water of fair quality before it failed through corrosion of the casing. In 1905 a new bore was put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. As the water was, however, impure, and contained an excess of sulphuretted hydrogen, boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A further bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded a fresh and clear water supply of about 145,000 gallons per day. Corrosion troubles occurred here also, and at the end of 1912 another bore was put down to a depth of 235 feet, artesian flows being struck at 187 feet and 235 feet. Towards the end of 1915 a flow of 200,000 gallons per day was struck at a depth of 125 feet on the Powerscourt Estate, near Maffra. Other bores are being put down in the locality.

Largely due to the failure of surface supplies in the drought of 1878 to 1886, no less than 499 bores were, before the end of 1888, put down by shire councils aided by the Government. The total depth bored was 40,000 feet; fresh water was struck in 78 instances; 47 yielded brackish but usable water; 229 were salt, while the balance were dry. The bores covered practically the whole of the settled portions of Northern and North-western Victoria and parts of Gippsland.

In the late eighties a number of bores were put down in the north-western part of the State, varying from 200 to over 2,000 feet in depth, but without any notable success. In 1897 a Board reported on boring for artesian water supply in the Mallee country, but this report was adverse, except as regards the extreme northern portion thereof. In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for domestic purposes. In 1908 boring was commenced in the Mallee country near the border east of Pinnaroo in South Australia, and a line of bores from the Border to Kow Plains has proved the existence of a large sheet of underground water. Altogether, 94 bores have been successful in striking fresh water, and their depths vary from 155 to 752 feet, the water rising to within from 207 to 6 feet of the surface. In three instances the bores flow, the water rising from 4 to 17 feet above the surface. The fresh water extends nearly as far east as the 142nd meridian, and its northern limit is approximately the 35th parallel.

At the 30th June, 1923, the number of existing bores in use in the north-western portion of Victoria was 326, from which supplies are obtained by pumping. The total depth bored amounted to 90,600 feet, while the maximum and minimum depths at which water was struck were 700 and 150 feet respectively. The figures include also about 232 existing private bores, with a total depth of about 47,000 feet.

(iv) *Queensland.* A return relating to the 30th June, 1922, classifies the Queensland artesian bores under the following headings:—

ARTESIAN BORES.—QUEENSLAND, 30th JUNE, 1922.

Sunk by—				Artesian Flows.	Sub- Artesian or Pumped Supplies.	In Progress, Abandoned, or Uncertain.	Total.
Government	..	..	..	68	86	145	299
Local governing authorities	..	..	..	16	22	23	61
Private owners	..	..	..	1,182	1,455	961	3,598
Total	..	..	..	1,266	1,563	1,129	3,958

The estimated yield of water from 1,266 flowing bores on 30th June, 1922, was 393,073,360 gallons per diem. The deepest well was about 40 miles west of Blackall, lying east of the Barcoo River; this had a depth of 7,009 feet, and was stated to yield 70,000 gallons daily. Further sinking is in progress. The flow is, of course, a comparatively small

one, many wells yielding, when uncontrolled, from one to three million gallons a day. The waters of many of the wells have been analyzed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral waters known as "Helidon Spa," "Boonah Spa," and "Junot Spa," which are much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

Of the 3,958 bores in Queensland, 360 have been put down by the State Government or Local Authorities, while 3,598 have been sunk by private enterprise; 1,266 bores are flowing, and 1,563 give a pumping supply, the balance of 1,129 are either in progress of construction, or are abandoned, or uncertain. The total depth bored is 3,521,978 feet. The minimum and maximum depths at which artesian water was struck are 10 feet and 6,000 feet respectively, while the temperature of the flow ranged from 81 to 210 degrees Fahr.

(v) *South Australia.*—(a) *General.* There were in South Australia 146 Government bores existing at 30th June, 1922, of which 37 were artesian and 109 sub-artesian. Of these, 107 were under 1,000 feet in depth; 24 from 1,000 to 2,000 feet; 7 from 2,000 to 3,000 feet; 5 from 3,000 to 4,000 feet; and 3 over 4,000 feet. The deepest flowing bore was at Patchawarra, on the Farina to Haddon, via Innamincka route, measuring 5,458 feet, but now yielding only 50 gallons per day. The maximum flow, viz., 1,250,000 gallons, is obtained at Coonie Creek, east of Lake Frome.

The following table gives particulars as to South Australian bores at 30th June, 1922:—

EXISTING ARTESIAN BORES.—SOUTH AUSTRALIA, 1922.

Particulars.							Artesian and Sub-artesian.
Bores existing	..	..	..	..	..	..	146
Total depth bored	..	..	..	..	..	..	114,625
Daily flow	..	..	..	..	..	gallons	(a) 13,204
Depth at which water was struck—							
Maximum	..	..	..	..	..	feet	4,850
Minimum	..	..	..	..	..	feet	55
Temperature of flow—							
Maximum	..	..	..	..	..	°Fahr.	208
Minimum	..	..	..	..	..	°Fahr.	82
Total cost of construction of bores up to 30th June, 1922							£326,611
Expenditure during year on boring operations							(b) £565

(a) Flowing bores only. (b) £770 was received for casing from an abandoned bore, making a credit of £205 on the year's operations.

Of the above-mentioned bores, 47 are situated within the Great Artesian Basin, and the remainder are in the Lower Murray and other local basins.

(b) *Bores between the Murray and the Eastern Boundary of the State.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 feet, no success was met with. Ki Ki bore was sunk in 1887, and at 361 feet a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887. In 1904 a bore was sunk at Cotton, and numerous successful bores have since been put down by the Public Works Department, and subsequently by residents of the district. The water rises to a distance from the surface of from 15 to 320 feet, and the maximum quantity obtained per diem is 48,000 gallons at the Gosden bore. Several wells, ranging

in depth from 55 to 221 feet, have also been sunk in this district. The latest Government bores are Kumara in the Hundred of Kingsford, and Perponda in the Hundred of Vincent. The former has a depth of 240 feet, and the water, which is in large supply, rises to within about 96 feet of the surface. The latter is 300 feet in depth, and the water rises to within 56 feet of the surface. The water is fresh, containing about $\frac{3}{8}$ oz. salts and other solid matter per gallon.

(c) *Bores West of Oodnadatta.* A series of bores has been sunk, beginning with Breaden bore, 20 miles west of Oodnadatta, which was put down in 1911. The others since put down in this district are at Gypsum, Imbitcha, Mirackina, Raspberry Creek, Appreetinna, Wintinna, and Marla. Of these, the only artesian supply is at Raspberry Creek, where 1,000,000 gallons per day of good water are obtained. The depths of these bores range from 280 feet at Mirackina to 1,122 feet at Breaden, and the water from all of them is good. A bore now in progress about 70 miles west of Oodnadatta is expected to obtain an artesian supply at about 600 feet.

(d) *Other New Bores.* The Moutecollina Bore, on the Innamincka Track, has been completed, being sunk to a depth of 2,550 feet, and a splendid supply of good artesian water was struck at 2,450 feet. No. 2 bore, in the Stuart's Range Opal Fields, was sunk to a depth of 1,000 feet, and a useful supply of sub-artesian water obtained. Good water has also been struck in the latest bore completed, viz., Glenmanyie, east of Lake Frome, which is situated on the extreme southern edge of the Great Australian Basin.

(e) *Eyre Peninsula.* From time to time bores have been sunk on Eyre Peninsula but with little success. In some instances, stock water ($1\frac{1}{2}$ ozs. salts to the gallon) was obtained, but this only occurred on the Nullarbor plains. In all other cases the water struck was too salt to be used. Consequently the supply of water is now principally from catchments, and a number of reservoirs have been constructed to hold from 1,000,000 to 9,000,000 gallons each, while many underground tanks have been built to contain from 40,000 up to 500,000 gallons each.

(vi) *Western Australia.*—(a) *General.* The work by which the Government of Western Australia provides a permanent supply of water to Kalgoorlie, Boulder, and adjacent districts on the eastern goldfields comes properly under the heading of "Water Supply Works." A description of this undertaking is fully given in previous issues of the Year Book. (See No. 6, p. 576.)

The statistics in connexion with the Goldfields Water Supply undertaking and the Mines Water Supplies will be found in the chapter of this book dealing with *Local Government*.

The following table gives particulars regarding Western Australian artesian bores at 30th June, 1922 :—

EXISTING ARTESIAN BORES.—WESTERN AUSTRALIA, 30th JUNE, 1922.

Particulars.					State.	Private.	Total.
Bores existing	..	..	..	..	95	87	182
Total depth	..	..	..	feet	92,138	72,846	164,984
Daily flow	..	..	..	gallons	25,480,300	30,725,500	56,205,800
Depth at which artesian water was struck—							
Maximum	..	..	..	feet	2,275	(a)	..
Minimum	..	..	..	feet	39	(a)	..
Temperature of flow—							
Maximum	..	..	..	°Fahr.	140	(a)	..
Minimum	..	..	..	°Fahr.	75	(a)	..

(a) Not available.

To 30th June, 1922, the total number of Government bores was 95, while there were, in addition, approximately 87 private bores recorded.

(b) *The Coastal Plain Basin or Perth Area*, which, generally speaking, extends from Cape Leeuwin to Dongarra, and from which the Metropolitan Water Supply is largely drawn, yields a supply of water mostly fresh and suitable for domestic purposes, though towards the north it becomes brackish and is only suitable for stock.

There are 40 bores in the Metropolitan area, several of which have been put down to augment the hills supply and the domestic supply of the suburbs, and Fremantle is largely dependent upon this source.

(c) *The North-west Basin or Carnarvon Area* may be said to extend from Gantheaume Bay in the south to Onslow in the north, and embraces a very large tract of ideal sheep country.

Many private bores have been put down on sites which permit of the gravitation of the water for miles, and, by this means, a very considerable area has been made available for stock-raising. Some remarkable flows have been obtained and, in one case, at a depth of 300 feet a flow reputed to be 3,000,000 gallons per day was struck, the water being suitable for stock. In all, about 69 bores have been put down.

(d) *The Gulf Basin or Broome Area*. So far very little development work has been done. Artesian bores have been put down in the town site, and the domestic requirements of the town are entirely supplied from this source. The area extends from Condon in the south-west to the Meda River beyond Derby in the north, and for a considerable distance inland. So far only 7 bores have been sunk, 3 being at Broome, 2 at Derby, and 2 on the telegraph line on the road between Derby and Hall's Creek, about 67 and 80 miles inland.

(e) *Eucla Area*. This area extends from Eucla, on the South Australian border, to west of Israelite Bay. So far, beyond the bores put down on the route of the Trans-Australian Railway, very little has been done in proving the resources of this area. In 1902 the first bore was sunk, about 35 miles north of Madura, and sub-artesian water was struck at 430 feet, at an elevation of 400 feet above sea level. Following upon this, a deep bore was put down at Madura, below the cliff and nearer the coast, when an artesian supply of stock water was obtained at a depth of 2,041 feet, yielding 5,700 gallons per day. Later, about 20 bores were sunk along the survey line of the railway, which runs east and west about 90 miles inland. These bores were put in at intervals between the 205 mile peg and the South Australian border, and ranged in depth between 323 and 1,344 feet. In most instances only stock water was struck at depths varying between 300 and 1,300 feet, and the largest supply was estimated at about 10,000 gallons per day.

(vii) *Northern Territory*. In the Northern Territory, bores to the number of 159 were put down up to 30th June, 1921, 51 belonging to the Commonwealth Government. This number does not include bores put down by hand-boring plants for test purposes. One bore is artesian, and 158 give a pumping supply. The cost of construction and equipment of the Government bores exceeded £20,000. The total depth bored in State and private bores was 47,158 feet. Maximum depths were 1,474 feet in State, and 1,760 feet in private bores, and minimum depths were 110 feet and 60 feet respectively. Information relating to water boring was not collected in 1921-22.

§ 2. Irrigation.

1. **General.**—Australia's first experiments in irrigation were made with the object of bringing under cultivation areas in which an inadequate rainfall rendered agricultural and even pastoral occupations precarious and intermittent, and, although these original settlements have generally proved fairly successful, most of the States, instead of promoting new settlement in unoccupied regions, are adopting the policy of making existing settlement closer, by repurchasing large estates, subdividing them into holdings of suitable sizes for cultivation, and selling the land upon easy terms of payment. It is in connexion with this Closer Settlement policy that the special value of irrigation is recognized.

2. **New South Wales.**—(i) *General.* The recognition of the fact that the area suitable for cultivation might be extended largely by a system of water conservation and irrigation has induced the Government to undertake various detached works and schemes, which will constitute portion of the irrigation system necessary to serve the whole State.

The system, and the works necessary to its maintenance and development within the State of New South Wales, are under the control of the Water Conservation and Irrigation Commission, which consists of the Minister for Agriculture for the time being as Chairman, and two other Commissioners. The works controlled by the Commission include the great Murrumbidgee Irrigation Scheme, the small irrigation settlements at Hay and Wentworth, natural works of water conservation, shallow boring for settlers, and water trusts and artesian bore trusts operating under the Water Act. The Commission has control also of storages and diversions of water by private persons for purposes of conservation and irrigation.

(ii) *Murrumbidgee Irrigation Scheme.* The main features of the scheme include a storage dam across the Murrumbidgee to retain the floodwaters, which will be released for use lower down the river during the dry summer months; a movable diversion weir, about 240 miles below the dam, to turn the required amount of water from the river into the main canal; a main canal, leaving the river near the weir; four main branch canals and a series of subsidiary canals and distributing channels through the area to be irrigated; bridges, checks, regulators and other structures throughout the entire system, and meters for measuring the volume allowed to each farm. Towns and villages, roadways to serve each farm, and a general surface drainage system, are also included in this scheme.

Further details in respect of the storage dam, division weir and canals, together with the areas thrown open for settlement and the conditions of tenure, are contained in previous issues of the Year Book. (See Year Book No. 15, page 442.)

The irrigation area is situated on the northern side of the Murrumbidgee River where it is anticipated that there will ultimately be upwards of 200,000 acres under irrigation in blocks devoted to fruit and vegetable growing, dairying, stock-raising, etc. With the aid of irrigation the soil and climate of these areas are suitable for the production of apricots, peaches, nectarines, prunes, pears, plums, almonds, melons, cantaloups, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables and fodder crops. Dairying and pig-raising are being undertaken by large numbers of settlers in the areas, and the canning and drying of fruit and the production of wine are becoming industries of large dimensions. The district is already one of the greatest fresh fruit producing centres in the State.

An up-to-date butter factory, which is managed co-operatively by dairymen on the areas, is in operation at Leeton. The output for the year under review was approximately 365 tons, from 191 suppliers. The factory supplies ice to town residents and settlers. A fruit and vegetable canning factory has also been provided, which purchases vegetables and fruits grown by the settlers, and the output is rapidly increasing. Co-operative companies have been successfully floated for the handling of fruit not suitable for canning. Extensive dehydration works have been established, and successful pooling schemes evolved for the economic handling of fresh fruit. A bacon factory and abattoirs under the same management as the butter factory have been erected at Yanco, where the settlers' pigs are treated, and where stock for butchers is slaughtered for local consumption.

The State Nursery is one of the most important departmental undertakings on the irrigation areas. For some years past the Leeton Nursery has been supplying trees to settlers, and in 1916 a second nursery was established at Griffith. Every effort is made to supply the best trees, free from disease, and, so far as possible, use is being made of budding wood from proven trees in the Leeton Nursery and at the Yanco Experiment Farm.

The Department of Agriculture, which controls the Yanco Experiment Farm, has also established at Griffith (Mirrool irrigation area), a viticultural nursery for the propagation of vines on phylloxera resistant stocks. These stocks are intended not only for the supply of settlers on the areas, but for vignerons in all parts of the State.

An electric power station having been erected near Yanco Siding, electric light and power are supplied to the various factories, business people, and residents of Leeton, Griffith and Yanco, and the supply is also available for settlers when the number of applicants in any centre warrants the connexions being made.

On the 30th June, 1922, 1,781 farms were held, representing a total area of 108,240 acres, and the number of town blocks held was 721.

In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers :—There are approximately 7,023 acres under deciduous fruit, 3,921 under citrus fruits, and 4,797 under vines. The estimated population of the areas is about 10,000.

(iii) *Curlwaa Irrigation Area.* The Curlwaa irrigation area embraces 10,600 acres, of which on 30th June, 1922, irrigable holdings, comprising 1,813 acres, had been taken up, in areas of $1\frac{1}{2}$ to 40 acres. Of the balance, 7,718 acres were leased as non-irrigable holdings for short terms, while the remainder of the area is made up of roads, channel, and other reserves. Of the irrigable area, 1,000 acres are planted as orchards and vineyards, of which 750 acres are in full bearing. There is also a small area under lucerne. It has been proved that the Curlwaa soil is eminently suited to the growth of citrus and other kinds of fruit, and some of the finest oranges grown in New South Wales are produced on this area.

The estimated weight of dried fruits produced on the Curlwaa area in the year 1921–22 was 7,078 cwt., the principal yields being sultanas, 2,407 cwt.; peaches, 1,820 cwt.; and currants, 1,981 cwt. The value of the dried fruit production was estimated at £35,075, while fresh fruit, crops, and other produce of the value of £17,121 were also produced.

The pumping machinery consists of a suction-gas plant, one engine of 120 brake horse power driving one eighteen-inch centrifugal pump, and two engines each of 55 brake horse power driving a ten-inch centrifugal pump. The average combined capacity of the pumps is 10,600 gallons per minute. During the 1921–22 season, 190,194,000 cubic feet of water were supplied. The length of the main channels is about 10 miles. The land may be leased for periods not exceeding 30 years, the annual rent at present varying from 1s. to 35s. per acre. The rate for water is fixed from time to time by the Commission, and is at present, except in a few special cases, 20s. per acre per annum. In addition to the rental and water charges there is a general rate of 10s. per acre on the area in productive bearing. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum.

In September, 1921, twenty-two irrigable blocks, comprising 450 acres, were set apart in a section of the area which had previously been leased as non-irrigable land. Half of these blocks were reserved exclusively for returned soldiers.

Satisfactory progress has been made in the development of an area set apart two years ago for settlement by returned soldiers. Other returned soldiers who acquired areas already partially developed are also making good progress.

(iv) *Hay Irrigation Area.* The Hay irrigation area consists of about 4,500 acres, of which on 30th June, 1922, the area held and used for irrigation purposes was 1,039 acres, in 109 blocks of from 3 to 34 acres. The term of lease is generally 30 years, and the annual rental from 5s. to 12s. per acre. In addition, there was at that date an area of 2,698 acres of non-irrigated land taken up in 48 blocks. The water rate is fixed from time to time, and during 1920–21 was £1 10s. per acre per annum. The pumping machinery is of similar type to that at Curlwaa, the capacity of the pumps being 4,000 gallons per minute. During the 1921–1922 season, 137,760,877 cubic feet of water were pumped with eight pumpings. Dairying is the principal industry, the cultivation of fruit being small.

(v) *Projected Irrigation Schemes.*—(a) *General.* The Water Conservation and Irrigation Commission is investigating schemes for utilizing the New South Wales share of the Murray waters, and for storing water for the purpose of irrigation and stock and domestic supply on the Lachlan, Macquarie, Hunter, Namoi and Peel Rivers.

(b) *Murray River.* The effect of constructing the Upper Murray storage will be to ensure at all times sufficient flow below Albury to permit of diversions for irrigation and stock and domestic supplies, and also to make good the losses in the river due to seepage, evaporation, and lockages. The Act provides that subject to certain conditions, New South Wales and Victoria shall share the regulated flow of the river at Albury, and shall each have the full use of all tributaries of the River Murray within its territory below Albury, with the right to divert, store, and use the flows thereof.

It is estimated that the New South Wales regulated river flow after the construction of the Upper Murray storage will amount to at least 120,000 acre feet per month at Albury during the irrigating season, and this will permit of a considerable amount of irrigation development along the river.

An investigation is being made into the manner in which the New South Wales proportion of the Murray waters can be most profitably applied, but as yet no conclusion has been reached.

(c) *Lachlan River.* The construction of a storage reservoir at Wyangala, below the confluence of the Abercrombie River, is being investigated with the intention of providing water in the river channel for pastoral purposes and for the irrigation of limited areas along the river banks. A proposal is also being investigated for the increase of the storage in Lake Cudgellico, which is fed from the Lachlan River, portion of the stored water being released in the summer months to supplement the flow of the river when necessary.

(d) *Macquarie River.* The construction of a storage reservoir on the river at Burrendong, below the confluence of the Cudgegong River, for the purpose of affording water for irrigation and stock and domestic supply below Wellington is now being investigated. Smaller schemes for the construction of storage dams at White Rock and on Campbell's River, at Bathurst, have also received consideration. Systematic gaugings are being made of the river flow with a view to determining the quantity of water which will be available if the storage dam be constructed.

(e) *Hunter, Namoi, and Peel Rivers.* Pumping by licensed private irrigators under the Water Act is increasing at such a rapid rate that in the case of some of the rivers, such as the Peel and the Hunter, it will not be possible to adequately supply the pumps in dry seasons until head storage works have been constructed. Investigations are in progress for storage dams on the Hunter and Peel Rivers, for dams on the Namoi River above Manilla, and lower down above the junction of the Peel River at alternate sites.

(vi) *Water Rights.* By Part II. of the Water Act 1912, the right to the use and flow and to the control of the water in all rivers and lakes which flow through, or past, or are situate within the land of two or more occupiers is vested in the Crown. Private rights are abolished, riparian law is simplified, and a system of licences is established for the protection of private works of water conservation, irrigation, water supply, drainage and the prevention of inundation of land. The enactment prevents litigation and determines the rights of riparian owners, and it also enables such owners to obtain licences to supply water to other occupiers of land not adjoining a river or lake.

During the year ending 30th June, 1922, 149 applications were received for fresh licences, comprising 90 in respect of pumps, or pumps in conjunction with dams or other works, 41 in regard to dams, and 18 other works. The number of applications received for the renewal of existing licences was 143; 91 of the applications were in respect of pumps, in some cases used in conjunction with dams or other works, 46 respecting dams, and 6 races and other works. Approximately, 1,481 licences were in force on the 30th June, 1921, and in the succeeding twelve months 160 new licences were issued and 68 were allowed to lapse, so that there were about 1,573 licences current on the 30th June, 1922.

(vii) *Water Trusts and Bore Trusts.* Part III. of the Water Act 1912 provides for the supply of water either for irrigation, stock, or domestic purposes, or for drainage. The liabilities thereon are repaid to the Crown, with interest spread over a period of years, and the works are administered by trustees appointed from among the beneficiaries under the Act, except in the case of trusts in the Western Division, where the Western Land Board is appointed as trustee. For the supply of water, trusts have been

constituted in connexion with (a) seventy-eight artesian wells; (b) nine schemes for the improvement of natural off-takes of effluent channels for the purpose of diverting supplies from the main rivers; (c) in three instances for the construction of weirs across stream channels; and (d) two pumping schemes, one from natural water-courses, and one from a well. The total area included within these trusts amounts to 7,637,967 acres.

3. Victoria.—(i) *General.* The Water Conservation Works in Victoria consist of irrigation works proper, and those providing mainly a domestic supply, such as the works for the supply of Melbourne, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Wonthaggi, Broken River, Kerang Lakes, Naval Base and Mornington Peninsula, and Mallee Supply Works administered by the State Rivers and Water Supply Commission; and other works of domestic supply controlled by Water Works Trusts or Municipal Corporations. Particulars of the works not controlled by the Commission will be found in the chapter on Local Government in this volume. With the exception of that of the First Mildura Irrigation and Water Supply Trust, all the irrigation schemes, and the more important domestic and stock water-supply works in rural districts, are vested in and controlled by the State Rivers and Water Supply Commission, a body composed of three members, which was created by the Water Act 1905, now incorporated in the Water Act 1915.

(ii) *Irrigation Schemes.* (a) *General.* This division comprises the schemes constructed and under construction for the supply of water to some twenty-four irrigation districts. Up to 1906 these schemes were controlled by local Trusts, which had obtained the moneys for their construction on loan from the State. By the Water Act 1905 all local control was abolished except in the case of Mildura, and the districts were transferred to the State Rivers and Water Supply Commission. Since that date the Government has adopted a vigorous irrigation policy, and the capital expenditure at 30th June, 1922, on water supply in the irrigation and water supply districts under the control of the Commission and at Mildura, exclusive of the amount (£443,000) expended by it on River Murray Agreement Works, was £5,684,000. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon Rivers. The cost of these headworks which now stands at £1,124,000 is not debited to any particular districts but is borne by the State. The extent of land under irrigated culture last year for all kinds of crop was 288,000 acres. Although this is some 83,000 acres less than the record area irrigated in the year 1919–20, it is nearly 14,200 acres above the average of the previous five years.

(b) *Goulburn River Scheme.* The Goulburn River Gravitation Scheme (see Official Year Book No. 13, map on page 561) is the largest of Victoria's irrigation enterprises. It serves, either for irrigation or domestic and stock purposes, throughout an area of 870,000 acres of land in the valleys of the Goulburn, Campaspe and Loddon Rivers. The present headwork of the system is a diversion weir on the Goulburn River, near Nagambie. It is constructed of concrete masonry, with 21 flood gates, which raise the up-stream water-level 10 feet above the concrete crest. These gates are lowered during high stages of river-flow to provide a clear waterway for the discharge of floods. The weir has a total length, including channel regulators, of 925 feet, and a height of 50 feet. The water is diverted by two main channels, the eastern carrying 330 cubic feet per second (660 acre feet per day) a distance of 33 miles to the country north of the Broken River, while the western, which has a capacity of 1,700 cusecs,* and a length of 23 miles, is used to feed distributaries of the Rodney District, and to fill Waranga Reservoir, the present principal storage basin of the scheme. This reservoir, formed by an earthen embankment $4\frac{1}{2}$ miles long across a natural depression, covers an area of $22\frac{1}{2}$ square miles to an average depth of 23 feet, and stores 333,400 acre feet. Two main channels issue from this reservoir, the Waranga-Rodney, of 250 cusecs* capacity, which feeds Rodney distributary channels, and the Waranga-Campaspe-Loddon, which leaves the reservoir with a capacity of 1,000 cusecs, reducing to 200 cusecs at the Serpentine Creek—92 miles westward—the present termination. This main channel is being extended to the west bank of the Loddon, and the system otherwise improved with a view to providing an irrigation supply to lands hitherto dependent entirely on the Loddon River. The total length of distributary channels is 1,650 miles.

* Cusecs = Cubic feet per second.

In order to meet the increasing demand for water in dry seasons, and to provide an irrigation supply for other suitable lands, the Commission is constructing a storage reservoir on the Upper Goulburn, just below its junction with the Delatite River, at what is known as the Sugarloaf site. This reservoir will submerge an area of 7,600 acres, and store about 300,000 acre feet of water, bringing the total capacity of the Goulburn storages to 654,000 acre feet. The foundations of the Sugarloaf structure will permit of the dam being raised, if necessary, to a height of 190 feet above the river bed. This would add 8,600 acres to the area submerged, and would increase the storage capacity from 300,000 to 900,000 acre feet. The construction of the first stage of this reservoir is nearing completion, and the storing of water was commenced in 1922.

The portion of the State served by this system comprises 21,000 acres east of the Goulburn, 565,000 acres between the Goulburn and the Campaspe, and 284,000 acres between the Campaspe and the Loddon. These areas include the irrigated Closer Settlements at Shepparton, Stanhope, Tongala, Rochester, and Dingee, as well as the districts formerly controlled by the Rodney and Tragowel Plains Irrigation Trusts, where the holdings are larger than in Closer Settlement areas. The balance of the area, including Deakin district, is provided with a domestic and stock supply, and water is sold for occasional irrigation on application. The amount of the compulsory charge for irrigation water allotted as a "right" is at present 7s. per acre foot in the two districts—Tragowel Plains and Dingee—farthest removed from the sources of supply, and 6s. per acre foot elsewhere.

(c) *Loddon River Scheme.* This also is wholly a gravitation system, with a regulating weir on the Loddon at Laanecoorie as its headwork. Its storage capacity is 14,000 acre feet, and other works include timber diversion weirs at Serpentine and Kinypanial, and 160 miles of channels in the Boort district, which supply an area of 74,000 acres for domestic and stock purposes and partial irrigation.

(d) *Murray River Schemes.* These comprise both gravitation and pumping schemes. The only wholly gravitation system is that known as the Kow Swamp scheme, which supplies the Kerang irrigation district of some 85,000 acres.

(e) *The Cohuna, Gannawarra, Koondrook and Swan Hill Schemes* are combined gravitation and pumping schemes, the pumped supplies being supplemented at varying stages of river level by the gravitation water.

The area covered by these schemes comprises 151,000 acres, and the quantity of water allotted as a "right" is one acre foot per irrigable acre. The compulsory charge is at present 6s. per acre foot of such water right in Swan Hill district, and 7s. per acre foot in the other three districts. In Kerang district—not under a compulsory irrigation charge—water is sold to irrigators on application at a charge not exceeding 3s. per acre foot of water supplied. In the Swan Hill district 2,600 acres of irrigable land were specially purchased for soldier settlement, and subdivided into 83 holdings. The channel system has been correspondingly extended. There being still a steady demand for irrigable blocks in this district further purchases of land for subdivision are contemplated.

(f) *The Nyah Irrigation Area* is supplied with water diverted from the Murray by a high-lift pumping plant. The settlement contains 3,800 acres, subdivided into 208 holdings of an average area of 17 acres, of which 203 are settled. The settlers include 60 discharged soldiers. Water rights are apportioned to these holdings on the basis of $2\frac{1}{2}$ acre feet of water for each irrigable acre, and the compulsory charge is at present 20s. per acre foot of such water rights. The land is devoted mainly to vineyards and orchards, and the settlers, taken as a whole, are making good progress. The value of irrigation to the district is reflected in the selling price of the land, fully planted blocks bringing remarkably high prices.

(g) *The Merbein Irrigation Area* comprises 8,300 acres, originally Crown lands. This settlement now contains 384 holdings, averaging 21 acres each, all of which are settled, the settlers including 166 discharged soldiers. The water is pumped from the Murray, and the land settlement conditions, water rights apportioned, and the compulsory charge are the same as at Nyah.

(h) *The Red Cliffs Irrigation Settlement* comprises 15,000 acres of first-class irrigable land adjoining the Mildura Settlement. It is the irrigable portion of the large Red Cliffs estate of 33,000 acres, known as the Debenture Holders' Land, acquired by the State for soldier settlement. The scheme of works for this district includes a pumping plant which will have a capacity of 250 cusecs, or 500 acre feet per day—lifted 105 feet. One unit, a 36 inch high lift centrifugal pump (capacity 50 cusecs) has been installed, and the remainder of the plant—two 48 inch turbine pumps (capacity 100 cusecs each)—are under construction. Each pump will be driven by a 1,600 b.h.p. steam turbine. The rising main is of reinforced concrete, 6 feet 6 inches in diameter, length 34 chains. An electric generator, of about 350 k.w. capacity, will be installed to provide for relifts, to water those parts of the area above the general level.

(i) *Werribee River Schemes.* (i) *Bacchus Marsh.* The headwork of this gravitation scheme is a reservoir of 15,000 acre feet capacity on Pyke's Creek, a tributary of the Werribee, the intake from the creek catchment being supplemented by a tunnel through a dividing spur, which taps the Werribee River near Ballan. The area of the district is 6,700 acres—half of which is irrigable—and includes some of the richest lucerne land in the State. The annual water right is one acre foot per irrigable acre, and the present compulsory charge is 22s. 6d. per acre foot of such right. The higher portion of the district receives a supply for domestic and stock purposes.

(ii) *Werribee.* This is another gravitation scheme on the same river, with a reservoir at Melton as its headwork. The irrigation district comprises 10,000 acres of first-class land, being the irrigable portion of the Werribee Closer Settlement Estate, which is within 20 miles south-westerly of Melbourne. The water right allotment is one acre foot per irrigable acre, and the charge at present is 12s. per acre foot. The non-irrigable portion of the estate, containing about 13,000 acres, is supplied with water for domestic and stock purposes.

(j) *Macallister River (Maffra) Scheme.* The works of this scheme, now in course of construction, comprise a storage reservoir on the Macallister River, at Glenmaggie, near Heyfield, and a system of main and distributary channels capable of commanding, by gravitation, some 80,000 acres of the rich river flats along the Macallister, Avon, and Thomson Rivers, near Maffra, Stratford, and Sale. The design for the dam—a large cyclopean concrete structure—provides for the raising of water to a maximum height of 100 feet above the foundations. The capacity of the storage will be 150,000 acre feet, while the unregulated flow of the river will yield an additional 100,000 acre feet. The commanded lands are specially suitable for beet culture and dairying, and include some 4,000 acres acquired by the State Rivers and Water Supply Commission for soldier settlement. Outlets for the produce of irrigated farms are already provided by the sugar, butter, and condensed milk factories, which are within easy reach; while the proximity to railway stations ensures to settlers the necessary transport facilities.

(iii) *Domestic and Stock Schemes.* (a) *General.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes, the capital expenditure on which at 30th June, 1922, was £5,778,000. The area of country lands artificially supplied with water for these purposes is nearly 21,000 square miles. The number of towns supplied, exclusive of the City of Melbourne and its suburbs, is 169, serving an estimated population of 333,600. In addition to the Commission's districts, some large areas are still administered by local authorities.

(b) *Wimmera-Mallee System.* The principal scheme in this division is that known as the Wimmera-Mallee Gravitation Channel System. This comprehensive scheme of works will compare favourably, it is believed, with any similar individual scheme for domestic and stock service, in any part of the world. The main supply is drawn from four reservoirs in the catchment area of the Wimmera River, at the foot of the Grampians Ranges, viz.:—Lake Lonsdale, Wartook, Fyans Lake, and Taylor's Lake. The reservoirs in use, including some minor works, have a combined storage capacity of 148,000 acre feet. The completion of the works in progress will bring this total to 200,000 acre feet. The water is conveyed, partly by natural water-courses, but chiefly

by artificial channels, aggregating over 4,500 miles in length, over farming districts comprising about 10,000 square miles, approximately one-ninth of the whole State (see Official Year Book No. 13, map on page 562).

(c) *Northern Mallee Water Supply Scheme.* In what is known as the northern Mallee, an area of about 1,250,000 acres, adjoining the Wimmera-Mallee Gravitation Channel System, but above its channel level, the Commission has provided a water supply for the large wheat holdings in the Walpeup district, by means of bores and large public tanks. The number of successful Government bores in use in this area is 92, their average depth being 420 feet. There are also 163 tanks, having a total capacity of 916,000 cubic yards, or 155 million gallons.

(d) *Naval Base and Mornington Peninsula Scheme.* Another scheme in this division which calls for mention here is the Naval Base and Mornington Peninsula Scheme. This comprehensive scheme—prepared at the request of the Naval Authorities—is for the supply of water to the Flinders Naval Base, and for the service of fifteen townships *en route*, including Berwick, Beaconsfield, Pakenham, Aspendale, Chelsea, Carrum, Frankston, Mornington, and Hastings. An ample supply of water is obtainable from the headwaters of the Bunyip River, which drains some 30 square miles of forest country above the point of off-take. The works are so far advanced that water is already being delivered at the Naval Base, and to the townships of Mornington, Frankston, Aspendale, and the intervening bayside resorts, as well as the inland townships of Beaconsfield, Berwick, Cranbourne, Somerville, and Bittern.

The scheme is being extended to supplement the supply to the township of Dandenong, hitherto controlled by a local Trust, the works of which were recently transferred to the Commission, which will administer them as part of the general scheme.

(e) *Flood Protection.* The Water Acts of Victoria provide for the constitution of Flood Protection Districts, in which the residents are rated for schemes carried out for their benefit. The works are constructed, and districts administered by the State Rivers and Water Supply Commission, and the Commission is carrying out extensive schemes at Koo-wee-rup and Cardinia, in the south-eastern portion of the State, and works, on a smaller scale, at Echuca.

(iv) *Mildura.* The Mildura Irrigation Scheme is controlled by the First Mildura Irrigation Trust, and water is obtained by pumping from the River Murray. The area of the settlement is 45,000 acres, of which 13,000 acres are under intense culture, vines predominating. During the year ending 30th June, 1922, the Trust's receipts aggregated £55,127, and its expenditure £49,131, whilst loans—exclusive of £8,029, arrears of interest—advanced by the Government amounted at 30th June, 1922, to £95,709. The number of water acres supplied during the year was 44,150.

4. *Queensland.*—The main irrigation works in Queensland are as follows:—(a) those at Ayr, which utilize the waters of the Burdekin River, and shallow wells on its banks; (b) Townsville (wells, creek, and river); (c) Rockhampton (wells, river, creek, etc.); (d) those at Bingera, near Bundaberg, which utilize water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (e) those at Fairymead, which utilize water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about 6 miles from Bundaberg. There were 754 irrigators in the State in 1921, chiefly farmers and graziers, and the area irrigated was 11,264 acres.

5. *South Australia.*—(i) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a smaller scale. The area of settlement is 30,000 acres, and the irrigated area 7,600 acres. The population of the town and settlement is 4,800. Sultanas, currants, doradillos, gordos, oranges, apricots, peaches, pears, prunes, olive oil, and grape spirit are the chief products. There are two distilleries for the manufacture of grape spirit and several packing sheds for dried fruits. The dried fruit pack for 1922 amounted to 2,743 tons.

(ii) *Other Waterworks.* A number of country water works are under the control of the Public Works Department. As, however, they are not irrigation works properly

so called, but are used for supplying water for domestic purposes, etc., to several towns, no further reference will be made to them in this chapter. (See the chapter on **Local Government**.)

(iii) *Areas under Irrigation.* The Irrigation Areas on the River Murray above Morgan under Government control, up to the end of February, 1923, contained 16,293 acres of irrigable land, allotted to 942 settlers, including 539 returned soldiers, about 1,280 acres reserved by the Department for fodder cultivation, etc., 6,600 acres ready for allotment, about 5,600 acres in course of preparation, and 24,200 acres under survey. The pumping plants at present installed on these areas aggregate 6,233 brake horse-power, with a pumping capacity of 7 million gallons per hour.

The *Cadell Irrigation Area* is 7 miles by river above Morgan. The total area of settlement is 2,726 acres, of which 1,183 are irrigable. Blocks have been allotted to 78 soldier settlers, and the balance is ready for allotment in 7 blocks. The area is suitable for fruit growing.

The *Waikerie Irrigation Area* is 39 miles above Morgan by river. This area includes the old Waikerie and Ramco settlements. The total area of settlement is 9,276 acres, of which 2,806 acres is first-class irrigable land, growing fruit trees and vines. The irrigable area has recently been extended to 3,366 acres. The area allotted is divided between 136 settlers, and a further 26 could be accommodated.

The *Holder Irrigation Area* adjoins the Waikerie Irrigation Area, and has been incorporated as a portion of that area. It contains 471 acres of irrigable land, and 1,890 acres of dry land. Blocks have been allotted to 23 settlers, including 10 soldier settlers, and a further 3 settlers can be accommodated.

The *Kingston Irrigation Area* is situated 75 miles above Morgan by river, and comprises the old village settlement of that name. It has a total area of 3,748 acres, of which 493 acres are irrigable. This area was allotted to 30 settlers in July, 1914, and is used for fruit and vine culture.

The *Moorook Irrigation Area*, adjoining the Kingston Area, contains 5,960 acres of land, of which 1,062 acres is good land suitable for vines and fruit culture. Altogether 1,041 acres of irrigable land have been allotted to 55 settlers, of whom 34 are soldier settlers.

The *Cobdogla Irrigation Area* is on the opposite side of the river to Kingston and Moorook Areas, and comprises 136,600 acres. This area contains about 30,000 acres of first-class land, capable of intense culture. The area is divided into five divisions, the Cobdogla, Nookamka, Loveday, Weigall, and MacIntosh divisions. The total area of irrigable land contained in these divisions is about 30,470 acres, of which 661 acres have been allotted to 20 settlers in the Cobdogla division, and 1,790 acres to 116 soldier settlers in the Nookamka division. Constructional work on the Loveday division will shortly be completed, and the remaining divisions are under survey, and construction work will shortly be undertaken there. Pumping plants have been installed on the Cobdogla, Nookamka, and Loveday divisions, with a total capacity of 35,700 gallons per minute, while the contemplated erection of additional plant capable of pumping 80,600 gallons per minute will bring the pumping capacity of these three divisions to 116,300 gallons per minute.

The *Berri Irrigation Area* is 120 miles above Morgan by river, and contains a total area of 23,400 acres, of which 8,100 acres is first-class land for fruit and vine culture. A total of 7,461 acres of irrigable land has been allotted to 458 settlers, of whom 275 are soldier settlers, and 489 acres are ready for allotment in 33 blocks. The pumping plant has a capacity of 33,700 gallons per minute against total heads varying from 50 feet to 120 feet.

The *Chaffey Irrigation Area* comprises a large area of country adjacent to Renmark, at present known as Ral Ral. Survey work is proceeding over 14,000 acres of prospective irrigable land. A portion of this area, 1,760 acres, has been subdivided into 110 blocks, and is now ready for allotment to soldier settlers. A pumping plant with a capacity of 12,500 gallons per minute against a total head of 50 feet has been installed. The balance of the area under survey at present, viz., 12,200 acres, will be irrigated with a lift of

100 feet, and the preliminary survey work is being carried out as rapidly as possible. The future extension of this area may reach a total of 100,000 acres of irrigable land, with lifts not exceeding 100 feet.

The *Irrigation and Reclaimed Swamp Areas* under Government control on the River Murray below Morgan contain 6,100 acres of high, irrigable, and reclaimed swamp land, allotted to 250 settlers, of whom 64 are discharged soldiers. The former land is irrigable by pumping, and the latter by gravitation. There are also 1,500 acres ready for allotment to 70 settlers, and 5,700 acres under preparation, which will accommodate 260 additional soldier settlers. Pumping plants installed total 1,500 b.h.p., with a capacity of $3\frac{1}{2}$ million gallons per hour.

Mobilong and Burdett Areas adjoin Murray Bridge, and contain 575 acres of reclaimed fodder land with 45 settlers.

Long Flat and Monteith Flat below Murray Bridge have between them a reclaimed area of 1,342 acres, divided between 57 settlers.

Swanport Area below Murray Bridge has 191 acres of fruit and fodder land, and has 7 soldier settlers.

The *Jervois Irrigation Area* is in course of construction. It is 15 miles below Murray Bridge, and includes 1,224 acres of irrigable and reclaimed land, which will accommodate 62 settlers when completed.

The *Woods Point Area* is 12 miles below Murray Bridge, and contains in its total area of 3,726 acres about 1,296 acres of reclaimed land. The area is in course of preparation, and will accommodate 52 soldier settlers.

The *Wellington Area* is 18 miles below Murray Bridge, and has an area of over 12,000 acres; of this area about 1,820 acres are reclaimed land. This area will provide for 80 soldier settlers, and is at present in course of preparation for settlement.

The *Mypolonga Area* is 9 miles above Murray Bridge. This area has a river frontage of 7 miles. The total area of this settlement is 5,800 acres, of which 1,036 are irrigable and 1,627 acres reclaimed land. The area has 84 settlers.

The *Pompoota Area* is situated 13 miles above Murray Bridge, and was previously used as a Training Farm for prospective soldier settlers. The area contains 4,127 acres, of which 670 acres are fruit and fodder land. Blocks have been allotted to 26 soldier settlers, and a further 5 settlers can be accommodated.

The *Wall Area*, 16 miles above Murray Bridge, has 768 acres of irrigable and reclaimed land. Twenty soldier settlers are settled on the area, and blocks are available for 9 more.

The *Neeta and Cowirra Irrigation Areas* are 20 miles above Murray Bridge, and include 410 acres of highly irrigable land, and 1,745 acres of reclaimed fodder land. These areas are in course of preparation, and at present 20 soldier settlers have been placed on the blocks. A further 80 settlers can be accommodated when areas are complete.

The *Baseby Area* is about 21 miles above Murray Bridge, and has an area of 1,350 acres, of which 528 acres will be reclaimed and allotted to 26 soldier settlers. Development work is proceeding on this area.

Lake Albert. There is a possibility of this lake being reclaimed in the near future, which will give an area of about 40,000 acres suitable for dairying.

The total area, including aforementioned areas adjacent to the River Murray possible of reclamation or of being brought under irrigation, is 250,000 acres. The reclaimed lands consist of peaty soils composed of rich river silt, and are suitable for the growth of lucerne and other fodders, onions, potatoes, etc. The soils of the irrigable lands have already proved their suitability for the production of peaches, apricots, nectarines, oranges, lemons, figs, and grapes.

(iv) *Allotment of Irrigated Land.* The allotment of irrigated land and the terms of settlement, as well as the charges for water and assistance rendered to the settlers by the Irrigation Department, are referred to at length in previous issues of the Year Book (see Year Book No. 15, page 453). All lands are allotted under perpetual lease in blocks up to 50 acres of irrigable or reclaimed land. In addition, areas of non-irrigable land are allotted to lessees of irrigation and reclaimed blocks for dry farming.

On the irrigable land, the water rate has been fixed at 60s. per acre per annum for the first four years, after which an amount will be charged sufficient to cover actual cost of supplying water, and interest on pumping plant, channels, etc., whilst on the reclaimed lands an amount is charged to meet the annual management, drainage and maintenance expenses. On the irrigable lands, each lessee is entitled for the water rate to 24 acre inches per annum, supplied in four irrigations; special irrigations and domestic supplies are supplied at times other than during the general irrigations, at a nominal cost. On the reclaimed lands water is supplied regularly by reticulation from the river.

At the present time no land is available for civilian settlers, and it will possibly be two years before soldiers' demands are satisfied. So far as soldiers are concerned, the Department, in most instances, prepares and plants the land for fruit culture prior to allotment, and clears, channels, grades, and plants up to 10 acres of vines.

6. *Western Australia.*—In this State an Irrigation Act provides for the constitution of irrigation districts. At Harvey, works for irrigating about 4,000 acres devoted to fruit growing, principally oranges, were opened on the 21st June, 1916. A scheme is now in preparation for irrigating a further area in the same district.

Numerous small private irrigation schemes are in full operation on many of the south-west rivers, in connexion with fruit, fodder, and potato growing.

7. *Murray Waters.*—(i) *General.* The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River being undetermined, negotiations which had been in progress for some considerable time resulted in the passing of the River Murray Waters Act 1915. This Act ratified and approved certain resolutions which had been agreed to by the Prime Minister of the Commonwealth and the Premiers of New South Wales, Victoria, and South Australia at the Premiers' Conference held at Melbourne in April, 1914. (See Official Year Book, No. 8, page 507.)

(ii) *Amendment of the Agreement.* As a result of proposals placed before the Conferences of Premiers which met on 25th May and 20th July, 1920, and the discussions which took place thereon, an agreement, providing for the amendment of the River Murray Agreement of 1914, was entered into by the four Contracting Governments on 23rd November, 1920. In the Agreement as so amended it was proposed that the construction of all works covered by the River Murray Scheme should be placed under the control of the River Murray Commission in lieu of the three Constructing Authorities as provided for in the Agreement of 1914. It was also provided that the four Contracting Governments should contribute towards the cost of the scheme in equal shares, and that all plant required for the construction of works should be purchased by the Commission from funds provided by the four Contracting Governments. The Parliaments of the Commonwealth and the States of New South Wales, Victoria, and South Australia have passed legislation giving effect to the amendments proposed.

(iii) *Constitution of River Murray Commission.* The River Murray Agreement was signed on 9th September, 1914, and in November, 1915, Acts ratifying the Agreement were passed simultaneously by the Parliaments of the Commonwealth and the three Contracting States. On 31st January, 1917, the Agreement was brought into operation and the River Murray Commission, consisting of a representative of each of the four Contracting Governments, was appointed.

The Commission is charged with the duty of giving effect to the Agreement and the River Murray Waters Acts.

(iv) *Activities.* The Agreement provides for the construction of the following works :—

To be constructed by the Constructing Authorities for New South Wales and Victoria severally or jointly as may be agreed upon.—The Hume Reservoir; seventeen Weirs and Locks on the River Murray between Echuca and Wentworth.

To be constructed by the Constructing Authority for New South Wales.—Nine Weirs and Locks on the River Murrumbidgee.

To be constructed by the Constructing Authority for South Australia.—The Lake Victoria Storage; nine Weirs and Locks on the River Murray below Wentworth.

The following works are now in course of construction, in accordance with the designs and estimates approved by the Commission :—

The Hume Reservoir—estimated cost £1,639,000. This Reservoir, which will be created by the construction of a dam immediately below the junction of the Mitta Mitta and Murray Rivers, will have a storage capacity of 1,000,000 acre feet. Work is proceeding on both the New South Wales and Victorian sides of the River, the total expenditure as at the 31st March, 1923, being £670,000.

Weir and Lock at Torrumbarry, near Echuca.—Estimated cost £120,000 (subject to revision). This Weir and Lock, which is now approaching completion, will allow of the diversion of water for irrigation purposes over considerable areas on both sides of the river.

The Lake Victoria Storage—Estimated cost £320,000. The scheme approved provides for the construction of embankments and channels, and the improvement of Frenchman's Creek (the inlet channel to the Lake) and the Rufus River (the outlet channel). The Lake, on completion of the works proposed, will have a storage capacity of 514,000 acre feet. Work on this storage, which has been greatly delayed on account of industrial disputes, is now well advanced.

Weir and Lock No. 9, situated immediately below the junction of the Frenchman's Creek (the inlet channel to the Lake Victoria Storage) and the main stream. Estimated cost £186,898.

Weir and Lock No. 5, near Renmark—Estimated cost £275,000.

Weir and Lock No. 3, near Kingston—Estimated cost £126,328.

The Weir and Lock at Blanchetown (No. 1), which was commenced by the South Australian Government before the River Murray Agreement came into effect, was completed, with the exception of minor details, during the early part of 1922, and has been brought into operation. The expenditure incurred on this work amounted to approximately £230,000. All vessels carrying goods passing through the lock will be liable to the payment of tolls at the rate of 6d. per ton of freight carried, in accordance with the Tolls Regulations prescribed by the Commission, in pursuance of Section 7 of the River Murray Waters Act 1915, and appearing in the *Commonwealth Gazette* of 23rd March, 1922.

(v) *Size of Locks.* It has been decided by the Commission and the Contracting Governments that all locks in the River Murray below the junction of that River with the River Darling shall be constructed of a length of 275 feet, and that the length of the locks to be constructed in the Murray above that point and in the River Murrumbidgee shall be 170 feet. It was recognized that the heavier traffic on the River Murray below its junction with the River Darling necessitated the construction of locks of a greater length than was required in connexion with the upstream locks.

(vi) *Finance.* The estimated cost of the whole of the works covered by the River Murray Scheme is set down in the Agreement at £4,663,000, and it is provided that the four Contracting Governments shall contribute thereto in the following proportions :—Commonwealth, £1,000,000; New South Wales, Victoria, and South Australia, each £1,221,000. It is now clear that, owing mainly to the increases which have occurred in the costs of materials and labour since the original estimate was framed, the ultimate expenditure on these works will be considerably in excess of that estimate. The actual expenditure incurred to the end of March, 1923, on the works carried out by the three Constructing Authorities amounted to £1,850,000, towards which the Commonwealth Government contributed £405,000, the balance having been borne by the three Contracting States in equal proportions.

(vii) *Estimated Expenditure during Year 1923-24.* The estimated expenditure during the financial year 1923-24 prepared by the Commission and forwarded to the four Contracting Governments in accordance with the requirements of Clause 34 of the Agreement, is £1,039,000, made up as follows:—

New South Wales—Hume Reservoir, £265,000; Weir and Lock, Wentworth, £80,000; Surveys and Borings, £20,000; total, £365,000.

Victoria—Hume Reservoir, £260,000; Weir and Lock, Torrumbarry—completion surveys and general, £10,000; Weir and Lock, Mildura, £30,000; total, £300,000.

South Australia—Weir and Lock No. 2, £30,000; Weir and Lock No. 3, £64,000; Weir and Lock No. 5, £80,000; Weir and Lock No. 9, £120,000; Lake Victoria Storage, £80,000; total, £374,000.

The four Contracting Governments will contribute towards this proposed expenditure in the following proportions:—Commonwealth, £222,813 11s.; New South Wales, £272,062 3s.; Victoria, £272,062 3s.; South Australia, £272,062 3s.

(viii) *Gaugings.* All gaugings on the River Murray and its tributaries are made by the three Contracting States, which, in pursuance of an arrangement arrived at with the River Murray Commission, furnish that body periodically, for purposes of the Agreement, with the results of such gaugings. Arrangements were made, as a result of recommendations by a Conference of Gauging Officers convened by the Commission, for the adoption of uniform methods in connexion with the recording of gaugings by the three State Authorities, and the returns furnished to the Commission setting out the results of such gaugings. The returns furnished to the Commission during the year 1921-22 indicated that the total flow of the River Murray at Renmark during that year was 14,180,792 acre feet, while the total volume of water diverted by artificial or partly artificial means was estimated at 1,466,339 acre feet.

CHAPTER XXIV.

POPULATION.

§ 1. Enumerations and Estimates.

The nature of the early “musters” of the population and the subsequent Census enumerations which have been conducted in Australia were reviewed in Official Year Book, Number 15, pp. 1083–5. This review was accompanied by a tabular statement showing the dates on which the various enumerations were made, and the numbers counted on such occasions.

§ 2. Census of 4th April, 1921.

1. **Numbers Enumerated.**—The Census for the whole of Australia was taken as for the night between the 3rd and the 4th of April, 1921, and was the second Census under the provisions of the Commonwealth Census and Statistics Act 1905–20, which provides for the enumeration being dealt with from one centre, instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories were as follows :—

POPULATION.—4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	Males.	Females.	Persons.
States—			
New South Wales ..	1,071,501	1,028,870	2,100,371
Victoria ..	754,724	776,556	1,531,280
Queensland ..	398,969	357,003	755,972
South Australia ..	248,267	246,893	495,160
Western Australia ..	177,278	155,454	332,732
Tasmania ..	107,743	106,037	213,780
Territories—			
Northern ..	2,821	1,046	3,867
Federal Capital ..	1,567	1,005	2,572
Australia ..	2,762,870	2,672,864	5,435,734

2. **Increase since Census of 1881.**—(i) *Australia.*—The increase of population between the Census of 3rd April, 1911, and that of 4th April, 1921, was 980,729, of which 449,835 were males and 530,894 were females, as compared with an increase of 681,204, comprising 335,107 males and 346,097 females, for the preceding ten years. The population of each sex enumerated at the Censuses of 3rd April, 1881, 5th April, 1891, 31st March, 1901, 3rd April, 1911, and 4th April, 1921, was as follows :—

POPULATION.—AUSTRALIA, LAST FIVE CENSUSES.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Date of Census.	Males.	Females.	Persons.	(a) Masculinity.
3rd April, 1881	1,214,913	1,035,281	2,250,194	7.98
5th April, 1891	1,704,039	1,470,353	3,174,392	7.36
31st March, 1901	1,977,928	1,795,873	3,773,801	4.83
3rd April, 1911	2,313,035	2,141,970	4,455,005	3.84
4th April, 1921	2,762,870	2,672,864	5,435,734	1.66

(a) Excess of males over females per 100 of population.

(ii) *States and Territories.* The increases in the population of the several States and Territories during the past four intercensal periods have been as follow :—

POPULATION.—STATES, ETC., INTERCENSAL INCREASES.

State or Territory.	1881-1891.		1891-1901.		1901-1911.		1911-1921.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N.S. Wales ..	(a) 374,129	49.90	(a) 230,892	20.54	(a) 293,602	21.67	453,637	27.55
Victoria ..	278,274	32.30	61,230	5.37	114,481	9.53	215,729	16.40
Queensland ..	180,193	84.39	104,411	26.52	107,684	21.62	150,159	24.79
South Australia ..	39,119	14.15	42,813	13.57	50,212	14.01	86,602	21.20
Western Australia ..	20,074	67.57	134,342	269.86	97,990	53.22	50,618	17.94
Tasmania ..	30,962	26.76	25,808	17.60	18,736	10.86	22,569	11.80
N. Territory ..	1,447	41.93	(b)-87	(b)-1.78	(b)-1,501	(b)-31.20	557	16.83
Fed. Cap. Ter. ..	..	..	..	..	..	..	858	50.06
Total ..	924,198	41.07	599,409	18.88	681,204	18.05	980,729	22.01

(a) Including Federal Capital Territory. (b) Decrease.

For Australia as a whole, the increase during the period 1911-1921 was greater by 299,525 than that for the period 1901-1911, the rate of increase being 22.01 per cent. for 1911-1921, as against 18.05 for 1901-1911. The former corresponds to an increase of 1.67 per cent. per annum, the latter to an increase of 2.01 per cent. per annum.

As regards the separate States, both the numerical and relative increases in the case of New South Wales, Victoria, Queensland, South Australia, and Tasmania were greater for 1911-1921 than for 1901-1911. On the other hand, Western Australia experienced a smaller increase during the decade 1911-1921 than in either of the two immediately preceding decades. The Northern Territory showed during the period 1911-1921 its first increase in population since the decade 1881-1891.

§ 3. Distribution and Fluctuation of Population.

1. **Present Number.**—The population of Australia on the 31st December, 1922, was estimated at 5,633,281 persons, of whom 2,866,461 or 50.88 per cent. were males, and 2,766,820 or 49.12 per cent. were females. The increase during the year 1922 was 124,208. equal to 2.25 per cent., males having increased by 67,734 or 2.42 per cent., and females by 56,474 or 2.08 per cent. Of the increase referred to, 86,185, or 69.39 per cent., was due to the excess of births over deaths, and 38,023, or 30.61 per cent., was due to the excess of immigration over emigration.

2. **Growth and Distribution.**—The following tables show the population of the States at decennial intervals from their foundation to the year 1910, and for each of the

last five years. In previous issues, the male and female population of Australia as a whole were given at quinquennial periods from 1788, but it is considered that the abridged table presented herewith will suffice for general purposes.

POPULATION.—1788 TO 1922.

Estimated Population at end of Year.

Year.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern	Federal Capital.	
MALES.									
(a) 1800	3,780	..	..	..	..	..	..	..	3,780
1810	7,585	..	..	..	..	..	..	..	7,585
1820	23,784	..	..	..	..	..	..	..	23,784
1830	33,900	..	..	..	877	(b) 18,108	..	..	52,885
1840	85,560	..	..	8,272	1,434	32,040	..	..	127,306
1850	154,976	..	..	35,902	3,576	44,229	..	..	238,683
1860	197,851	(b) 330,302	(b) 16,817	64,340	9,597	49,653	..	..	668,560
1870	272,121	397,230	69,221	94,894	15,511	53,517	..	..	902,494
1880	404,952	450,558	124,013	147,438	16,985	60,568	..	..	1,204,514
1890	602,704	595,519	223,252	166,049	28,854	76,453	..	..	1,692,831
1900	716,047	601,773	274,684	180,349	110,088	89,763	(c) 4,288	..	1,976,992
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	..	2,296,308
1918	984,796	684,243	363,154	219,701	159,865	100,089	3,500	(b) 1,179	2,516,527
1919	1,042,379	739,956	390,122	240,203	174,981	106,352	3,377	1,008	2,698,378
1920	1,067,945	753,803	396,555	245,300	176,895	107,259	2,911	1,062	2,751,730
1921	1,084,399	764,905	404,907	252,144	178,500	110,026	2,718	1,128	2,798,727
1922	1,107,695	788,626	415,802	257,475	183,386	109,494	2,540	1,443	2,866,461
FEMALES.									
(a) 1800	1,437	..	..	..	..	..	..	..	1,437
1810	3,981	..	..	..	..	..	..	..	3,981
1820	9,759	..	..	..	..	..	..	..	9,759
1830	10,688	..	..	..	295	(b) 6,171	..	..	17,154
1840	41,908	..	..	6,358	877	13,959	..	..	63,102
1850	111,924	..	..	27,798	2,310	24,641	..	..	166,673
1860	150,695	(b) 207,932	(b) 11,239	61,242	5,749	40,168	..	..	477,025
1870	225,871	326,695	46,051	89,652	9,624	47,369	..	..	745,262
1880	336,190	408,047	87,027	128,955	12,576	54,222	..	..	1,027,017
1890	510,571	538,209	168,864	152,898	19,648	68,334	..	..	1,458,524
1900	644,258	594,440	219,163	176,901	69,879	83,137	(c) 569	..	1,788,347
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	..	2,128,775
1918	977,171	753,002	341,097	237,851	150,318	102,754	1,139	(b) 1,053	2,564,385
1919	996,368	763,079	346,016	241,260	152,879	103,515	1,168	911	2,605,196
1920	1,023,777	774,106	354,069	245,706	154,428	105,493	1,078	910	2,659,567
1921	1,043,517	785,781	363,324	250,267	157,215	108,290	1,016	936	2,710,346
1922	1,065,237	801,599	372,488	255,719	160,222	109,430	1,011	1,114	2,766,820
PERSONS.									
1788	859	..	..	..	..	..	..	..	859
1790	2,056	..	..	..	..	..	..	..	2,056
1800	5,217	..	..	..	..	..	..	..	5,217
1810	11,566	..	..	..	..	..	..	..	11,566
1820	33,543	..	..	..	..	..	..	..	33,543
1830	44,588	..	..	..	1,172	(b) 24,279	..	..	70,039
1840	127,468	..	..	14,630	2,311	45,999	..	..	190,408
1850	266,900	..	..	63,700	5,886	68,870	..	..	405,356
1860	348,546	(b) 538,234	(b) 28,056	125,582	15,346	89,821	..	..	1,145,585
1870	497,992	723,925	115,272	184,546	25,135	100,886	..	..	1,647,756
1880	741,142	858,605	211,040	276,393	29,561	114,790	..	..	2,231,531
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	..	..	3,151,355
1900	1,360,305	1,196,213	493,847	357,250	179,967	172,900	(c) 4,857	..	3,765,339
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	..	4,425,083
1918	1,961,967	1,437,245	704,251	457,552	310,183	202,843	4,639	(b) 2,232	5,080,912
1919	2,038,747	1,503,035	736,138	481,463	327,860	209,867	4,545	1,919	5,303,574
1920	2,091,722	1,527,909	750,624	491,006	331,323	212,752	3,989	1,972	5,411,297
1921	2,127,916	1,550,686	768,231	502,411	335,715	218,316	3,734	2,064	5,509,073
1922	2,172,932	1,590,225	788,290	513,194	343,608	218,924	3,551	2,557	5,633,281

(a) Details as to sex not available for earlier decennial dates. (b) Previously included with New South Wales. (c) Previously included with South Australia.

So far as the numbers can be ascertained, the nucleus of the population of Australia consisted of 1,204 persons, including the military, who landed in Sydney Cove on the 26th January, 1788. For many years the number increased very slowly, and in 1825, when Tasmania (then known as Van Diemen's Land) was separated from New South Wales and constituted a separate colony, *i.e.*, 37 years after the first settlement, the total population was only 52,505 persons, of whom 38,313 were in New South Wales, and 14,192 were in Tasmania. The total for Australia attained its first million in 1858, 70 years after settlement. At this time the population was distributed among the States, or Colonies as they were then, as follows:—New South Wales, 31.97 per cent.; Victoria, 47.22 per cent.; Western Australia, 1.38 per cent., South Australia, 11.29 per cent.; and Tasmania, 8.14 per cent. The second million was reached in 1877, after a lapse of nineteen years, by an average rate of increase of 3.53 per cent. per annum. The third million was reached twelve years later, in 1889, by an annual rate of increase of 3.48 per cent.; the fourth million sixteen years later, in 1905, at the rate of increase of 1.74 per cent. per annum; and the fifth million thirteen years later in 1918, by an annual average rate of 1.79 per cent. It had been anticipated that the fifth million would be reached in 1915, but the suspension of immigration and the despatch of Australian troops to the war delayed its attainment until March, 1918.

The growth of the population of Australia and of each State thereof, is illustrated by the graph accompanying this Chapter.

3. **Increase at Decennial Periods since 1790.**—The following table furnishes particulars relative to the increase in population of Australia during each decade, and the percentage of such increase on the population at the commencement of the decade:—

POPULATION.—AUSTRALIA, DECENNIAL INCREASE.

Decade ended 31st December—	Increase during Decade—					
	Numerical.			Percentage.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
				%	%	%
1790	(a)	(a)	2,056	..	..	..
1800	(a)	(a)	3,161	(a)	(a)	153.75
1810	3,805	2,544	6,349	100.66	177.04	121.70
1820	16,199	5,778	21,977	213.57	145.14	190.01
1830	29,101	7,395	36,496	122.36	75.78	108.80
1840	74,421	45,948	120,369	140.72	267.86	171.86
1850	111,377	103,571	214,948	87.49	164.13	112.89
1860	429,877	310,352	740,229	180.10	186.20	182.61
1870	233,934	268,237	502,171	34.99	56.23	43.84
1880	302,020	281,755	583,775	33.47	37.81	35.43
1890	488,317	431,507	919,824	40.54	42.02	41.22
1900	284,161	329,823	613,984	16.79	22.61	19.48
1910	319,316	340,428	659,744	16.15	19.04	17.52
1920	455,422	530,792	986,214	19.83	24.93	22.29

(a) Not available.

4. **Area, Population, Masculinity, and Density—States, 1922.**—A previous table showed the estimated number of persons on the 31st December, 1922, in each of the States and Territories. In the following table the proportions of the total area, and of the total population represented by each State or Territory, are given, together with the masculinity and the density of population:—

AREA, POPULATION, MASCULINITY, AND DENSITY.—STATES, 1922.

State or Territory.	Percentage on Total Area.	Per cent. Estimated Population, 31st December, 1922.			Masculinity.(a)	Density. (b)
		Males.	Females.	Persons.		
New South Wales	10.40	38.64	38.50	38.57	1.95	7.02
Victoria	2.96	27.51	28.97	28.23	—0.82	18.10
Queensland	22.54	14.51	13.47	14.00	5.49	1.18
South Australia	12.78	8.98	9.24	9.11	0.34	1.35
Western Australia	32.81	6.40	5.79	6.10	6.74	0.35
Tasmania	0.88	3.82	3.95	3.88	0.03	8.35
Northern Territory	17.60	0.09	0.04	0.06	43.06	0.007
Federal Capital Territory	0.03	0.05	0.04	0.05	12.87	2.72
Total	100.00	100.00	100.00	100.00	1.77	1.89

(a) Excess of males over females in each 100 persons. (b) Number of persons per square mile.
NOTE—The minus sign (—) indicates excess of females over males in each 100 persons.

5. Urban and Rural Distribution.—The following table shows the number of persons and the percentage on the total population recorded at the Census of the 4th April, 1921, as resident in urban and rural areas respectively. The metropolitan divisions include the capital city and the adjoining urban areas; the urban provincial districts cover those cities and towns which are not adjacent to the metropolitan areas, and which are incorporated for local government purposes; those persons classed as migratory were mostly on board ships in Australian ports :—

URBAN AND RURAL POPULATION.—AUSTRALIA, CENSUS, 4th APRIL, 1921.
(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)
(Subject to revision.)

Particulars.	States.						Territories.		Total.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern	Federal Capital	
NUMBER.									
Urban—									
Metropolitan	899,059	766,465	209,946	255,375	154,873	52,361	..	..	2,338,079
Provincial ..	525,007	187,490	183,720	41,637	42,571	55,644	1,399	..	1,037,468
Rural ..	664,590	571,577	359,014	195,054	130,098	105,123	2,403	2,563	2,030,422
Migratory ..	11,715	5,748	3,292	3,094	5,190	652	65	9	29,765
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734
PERCENTAGE ON TOTAL.									
Urban—									
Metropolitan	42.80	50.05	27.77	51.57	46.55	24.49	..	..	43.01
Provincial ..	25.00	12.24	24.30	8.41	12.79	26.03	36.18	..	19.09
Rural ..	31.64	37.33	47.49	39.39	39.10	49.17	62.14	99.65	37.35
Migratory ..	0.56	0.38	0.44	0.63	1.56	0.31	1.68	0.35	0.55
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

For Australia as a whole 62.10 per cent. of the population is urban, this percentage being exceeded by New South Wales, 67.80 per cent., and Victoria 62.29 per cent. Tasmania, with 50.52 per cent., has the smallest percentage of urban population in all the States.

During the ten years between the Censuses of 1911 and of 1921 the population of the metropolitan areas in the aggregate increased in proportion to the total population of Australia from 38.03 per cent. in 1911 to 43.01 per cent. in 1921. This movement was common to all the States, though in varying degree. The relative accretion to the metropolitan total was greatest in Western Australia, where it increased from 37.85 per cent. to 46.55 per cent. of the population of the State, and was least in New South Wales, where it increased from 38.23 per cent. to 42.80 per cent. The abnormal increase in the proportion of the metropolitan population to the total population of Western Australia is not due entirely to the actual increase to the population of Perth and suburbs, but is caused in some measure by the departure from the State of many persons who had been engaged in connexion with the mining industry in extra-metropolitan districts.

In Victoria and in South Australia more than half the population lives within the metropolitan areas. At the Census of 1921, 50.05 per cent. of the population of Victoria, and 51.57 per cent. of the population of South Australia, were resident in their respective capitals. Of the total population of Australia 43.01 per cent. was in the metropolitan areas; the proportion of the total males being 40.35 per cent., and of the females 45.77 per cent. The post-censal estimates, which are given in the following table, show a higher proportion in each of the capitals than was shown by the Census.

6. Metropolitan Population—Australia and Other Countries.—The abnormal concentration of population in the capitals of the States of Australia, as compared with other countries, may be readily seen from the following table. It may be mentioned, however, that, in most of the European countries, the capital is not always the most populous of many big cities, whereas, in Australia, the capital is invariably the most populous city, and in some States is the only town of important magnitude.

METROPOLITAN POPULATION.—AUSTRALIA AND OTHER COUNTRIES.

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
New South Wales ..	Sydney ..	31st Dec., 1922.	955,900	43.99
Victoria ..	Melbourne ..		816,800	51.36
Queensland ..	Brisbane ..		230,200	29.19
South Australia ..	Adelaide ..		270,329	52.67
Western Australia ..	Perth ..		161,773	47.09
Tasmania ..	Hobart ..		54,566	24.92
Australia ..	(6 Cities) ..		2,489,568	44.24
New Zealand ..	Wellington ..	1922	112,080	8.86
Austria ..	Vienna ..	1920	1,841,326	30.03
Denmark ..	Copenhagen ..	1921	666,159	20.25
Hungary ..	Budapest ..	1921	1,184,616	14.91
Irish Free State ..	Dublin ..	1922	427,000	13.51
Saxony ..	Dresden ..	1919	587,758	12.58
England ..	London (a) ..	1922	4,534,230	11.88
Prussia ..	Berlin ..	1919	3,803,770	10.37
Belgium ..	Brussels ..	1921	775,039	10.36
Norway ..	Christiania ..	1920	258,483	9.75
Netherlands ..	Amsterdam ..	1920	647,427	9.43
Bavaria ..	Munich ..	1919	630,711	8.83
Scotland ..	Edinburgh ..	1922	423,155	8.63
France ..	Paris ..	1921	2,906,472	7.41
Portugal ..	Lisbon ..	1921	435,359	7.31
Sweden ..	Stockholm ..	1921	422,042	7.09
Finland ..	Helsingfors ..	1920	197,848	5.88
Greece ..	Athens ..	1920	292,991	5.29
Czecho-Slovakia ..	Prague ..	1921	676,476	4.98
Poland ..	Warsaw ..	1921	931,176	3.59
Spain ..	Madrid ..	1920	751,352	3.52
Switzerland ..	Berne ..	1920	104,626	2.70
Italy ..	Rome ..	1921	691,314	1.85
Russia (European) ..	Petrograd ..	1915	2,318,645	1.76

(a) Population of Greater London in 1922 was 7,563,730.

7. **Principal Urban Centres.**—Apart from seaports and certain mining centres, the concentration of population in Australia is often associated with the rainfall, and in the following list of "Urban Incorporated Areas" the average annual rainfall is shown for all such places where rainfall records are kept.

In the following table will be found particulars of the principal Urban Incorporated Areas in Australia which at the date of the Census, on 4th April, 1921, had a population of over 3,000. From this it will be seen that there were, in all, 50 localities in Australia returned as having a population upwards of 20,000. Of these 19 were in New South Wales, 18 in Victoria, 7 in Queensland, 3 in South Australia, 1 in Western Australia, and 2 in Tasmania.

By the term "Urban Incorporated Areas" is meant those urban districts which have been incorporated for municipal purposes. The populations shown in each case are those recorded within the municipal boundaries.

**POPULATION AND RAINFALL, PRINCIPAL URBAN INCORPORATED AREAS.—
AUSTRALIA, CENSUS, 4th APRIL, 1921.**

Town.	State in which Situated.	Approx. Population.	Average Annual Rainfall.	Town.	State in which Situated.	Approx. Population.	Average Annual Rainfall.
100,000 and over—			Inches.	10,000 and under			Inches.
Sydney ..	N.S.W.	104,153	48.04	20,000—			
Melbourne ..	Vic.	103,251	25.66	Annandale ..	N.S.W.	12,648	(a)
50,000 and under				Auburn ..	"	13,563	(a)
100,000—				Ballarat East ..	Vic.	13,452	(a)
Perth ..	W.A.	64,166	23.91	Bankstown ..	N.S.W.	10,670	34.32
Prahran ..	Vic.	50,290	25.38	Bexley ..	"	14,746	(a)
Randwick ..	N.S.W.	50,841	45.07	Burwood ..	"	15,709	40.24
20,000 and under				Coburg ..	Vic.	18,114	(a)
50,000—				Concord ..	N.S.W.	11,013	(a)
Adelaide ..	S.A.	39,552	21.05	Drummoyne ..	"	18,761	(a)
Ashfield ..	N.S.W.	33,636	40.71	Fremantle ..	W.A.	17,566	29.83
Ballarat ..	Vic.	21,215	26.96	Geelong ..	Vic.	14,805	21.35
Balmain ..	N.S.W.	32,104	(a)	Goulburn ..	N.S.W.	12,715	24.84
Bendigo ..	Vic.	25,682	21.17	Granville ..	"	13,328	(a)
Brighton ..	"	21,235	24.93	Hamilton ..	"	14,196	(a)
Brisbane ..	Qld.	42,629	45.65	Hindmarsh ..	S.A.	12,454	(a)
Brisbane South ..	"	37,151	(a)	Hurstville ..	N.S.W.	13,394	(a)
Broken Hill ..	N.S.W.	26,337	10.08	Illawarra Central and North ..	"	11,560	(a)
Brunswick ..	Vic.	44,484	(a)	Kew ..	Vic.	17,382	27.93
Camberwell ..	"	23,835	27.63	Kogarah ..	N.S.W.	18,226	(a)
Canterbury ..	N.S.W.	37,639	39.89	Lidcombe ..	"	10,522	34.40
Caulfield ..	Vic.	40,693	27.58	Lithgow ..	"	13,275	33.44
Collingwood ..	"	34,239	(a)	Manly ..	"	18,507	46.93
Essendon ..	"	35,269	24.24	Maryborough ..	Qld.	10,629	45.81
Fitzroy ..	"	34,938	(a)	Mascot ..	N.S.W.	10,929	(a)
Footscray ..	"	33,775	(a)	Newcastle ..	"	14,566	46.41
Glebe ..	N.S.W.	22,754	46.00	Norwood ..	"		
Hawthorn ..	Vic.	29,165	27.87	Kensington ..	S.A.	15,000	24.63
Hobart ..	Tas.	43,589	23.59	Parramatta ..	N.S.W.	14,594	36.03
Ipswich ..	Qld.	20,517	34.52	Port Melbourne ..	Vic.	13,089	(a)
Ithaca ..	"	20,905	(a)	Ryde ..	N.S.W.	14,854	35.22
Launceston ..	Tas.	24,305	28.16	Sandringham ..	Vic.	11,316	(a)
Leichhardt ..	N.S.W.	29,356	(a)	St. Peters ..	N.S.W.	12,700	(a)
Malvern ..	Vic.	32,306	31.14	St. Peters ..	S.A.	11,098	22.29
Marrickville ..	N.S.W.	42,240	39.09	Subiaco ..	W.A.	13,647	33.35
Melbourne South ..	Vic.	46,873	(a)	Thebarton ..	S.A.	14,031	(a)
Mosman ..	N.S.W.	20,056	45.19	Toowong ..	Qld.	9,987	36.59
Newtown ..	"	28,168	(a)	Waratah ..	N.S.W.	12,192	(a)
Northcote ..	Vic.	30,519	(a)	Waterloo ..	"	11,199	(a)
Paddington ..	N.S.W.	26,364	(a)	Wickham ..	"	12,151	(a)
Petersham ..	"	26,236	(a)	Williamstown ..	Vic.	19,442	(a)
Port Adelaide ..	S.A.	30,101	(a)	Windsor ..	Qld.	18,250	35.24
Redfern ..	N.S.W.	23,978	(a)				
Richmond ..	Vic.	43,174	25.65	5,000 and under			
Rockdale ..	N.S.W.	25,189	(a)	10,000—			
Rockhampton ..	Qld.	24,168	40.17	Albury ..	N.S.W.	7,751	27.95
St. Kilda ..	Vic.	38,579	(a)	Alexandria ..	"	9,793	(a)
Sydney North ..	N.S.W.	48,438	(a)	Armidale ..	"	5,407	31.77
Toowoomba ..	Qld.	20,676	36.66	Bathurst ..	"	9,440	23.93
Townsville ..	"	21,353	48.39	Botany ..	"	6,214	45.73
Unley ..	S.A.	34,093	24.98	Boulder ..	W.A.	8,212	9.84
Waverley ..	N.S.W.	36,797	(a)	Bundaberg ..	Qld.	9,276	43.87
Willoughby ..	"	28,067	49.75				
Woollahra ..	"	25,439	(a)				

(a) No record.

POPULATION AND RAINFALL, PRINCIPAL URBAN INCORPORATED AREAS.—
AUSTRALIA, CENSUS 4TH APRIL, 1921—*continued.*

Town.	State in which Situated.	Approx. Population.	Average Annual Rainfall.	Town.	State in which Situated.	Approx. Population.	Average Annual Rainfall.
5,000 and under 10,000— <i>cont.</i>			Inches.	3,000 and under 5,000—			Inches.
Cairns ..	Qld.	7,464	90.48	Adamstown ..	N.S.W.	3,959	(a)
Carrum ..	Vic.	5,225	(a)	Albany ..	W.A.	3,976	36.68
Castlemaine ..	"	5,331	22.21	Ararat ..	Vic.	4,653	23.60
Charters Towers ..	Qld.	9,489	25.63	Bunbury ..	W.A.	4,475	36.47
Claremont ..	W.A.	5,511	31.24	Canley Vale ..	N.S.W.	3,106	35.10
Cottesloe ..	"	5,033	(a)	Carrington ..	"	3,115	(a)
Dubbo ..	N.S.W.	5,032	22.13	Casino ..	"	3,455	43.52
Enfield ..	"	8,530	(a)	Collie ..	W.A.	3,313	38.28
Erskineville ..	"	7,553	38.05	Cootamundra ..	N.S.W.	3,531	23.20
Geelong West ..	Vic.	9,641	(a)	Cowra ..	"	3,716	23.62
Glenelg ..	S.A.	7,994	18.37	Darlington ..	"	3,651	(a)
Glenorchy ..	Tas.	6,344	25.86	Daylesford ..	Vic.	3,328	33.96
Grafton and Grafton South ..	N.S.W.	6,077	33.86	Dundas ..	N.S.W.	3,523	(a)
Gympie ..	Qld.	6,537	46.25	Eaglehawk ..	Vic.	4,719	(a)
Hamilton ..	"	8,873	(a)	Echuca ..	"	3,745	16.91
Hamilton ..	Vic.	5,097	26.94	Forbes ..	N.S.W.	4,376	19.84
Hunter's Hill ..	N.S.W.	7,300	41.33	Fremantle East ..	W.A.	4,423	33.64
Kalgoorlie ..	W.A.	7,897	9.84	" North ..	"	3,545	32.65
Katoomba ..	N.S.W.	9,055	55.75	Geraldton ..	"	4,174	18.92
Lane Cove ..	"	7,592	(a)	Glen Innes ..	N.S.W.	4,974	31.83
Lismore ..	"	8,700	51.05	Henley and Grange ..	S.A.	3,980	17.72
Liverpool ..	"	6,302	(a)	Horsham ..	Vic.	3,790	17.71
Mackay ..	Qld.	6,313	69.15	Inverell ..	N.S.W.	4,369	30.46
Maitland West ..	N.S.W.	8,457	34.01	Junee ..	"	3,560	20.44
Mentone and Mor-dialloc ..	Vic.	5,674	26.05	Kempsey ..	"	3,613	44.42
Merewether ..	N.S.W.	5,908	(a)	Lambton ..	"	3,691	40.67
Mildura ..	Vic.	5,101	11.15	Lambton, New ..	"	3,550	(a)
Mount Morgan ..	Qld.	7,220	31.43	Maitland East ..	"	3,551	32.86
Newtown and Chil-well ..	Vic.	7,240	(a)	Maryborough ..	Vic.	4,744	20.77
Oakleigh ..	"	6,076	29.78	Midland Junction ..	W.A.	4,937	37.14
Orange ..	N.S.W.	7,398	25.26	Moree ..	N.S.W.	3,020	23.63
Port Pirie ..	S.A.	9,801	13.55	Mount Gambier ..	S.A.	3,969	31.34
Prospect and Sher-wood ..	N.S.W.	8,737	33.70	Mudgee ..	N.S.W.	3,170	25.75
Sandgate ..	Qld.	6,273	46.89	Northam ..	W.A.	3,602	16.86
Smithfield and Fairfield ..	N.S.W.	5,303	(a)	Parkes ..	N.S.W.	3,941	20.92
Strathfield ..	"	7,594	(a)	Penrith ..	"	3,604	29.87
Tamworth ..	"	7,264	27.39	Roma ..	Qld.	3,249	24.03
Wagga Wagga ..	"	7,679	21.40	Sale ..	Vic.	3,769	23.82
Wallsend ..	"	6,446	(a)	Singleton ..	N.S.W.	3,270	28.67
Warrnambool ..	Vic.	7,730	27.84	Southport ..	Qld.	3,550	54.76
Warwick ..	Qld.	6,091	28.12	Stawell ..	Vic.	4,413	21.31
Wollongong ..	N.S.W.	6,708	44.52	Stockton ..	N.S.W.	4,598	(a)
Wonthaggi ..	Vic.	5,170	34.83	Temora ..	"	3,048	20.34
Wynnum ..	Qld.	8,355	38.17	Vauchuse ..	"	3,727	47.60
				Wallaroo ..	S.A.	3,308	14.18
				Wangaratta ..	Vic.	3,689	24.67
				Wellington ..	N.S.W.	3,924	23.01
				Windsor ..	"	3,808	30.42
				Young ..	"	3,283	25.16

(a) No record.

§ 4. Elements of Increase.

1. **Natural Increase.**—(i) *General.* The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," i.e., the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country "net immigration" provides an important part of the increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the principal element of increase. A graph showing the natural increase to the population of each State and of Australia, from year to year since 1860, accompanies this Chapter.

POPULATION.—NATURAL INCREASE (a), 1861 TO 1922.

Period.	States.						Territories.		Total.
	N.S.W. (b)	Victoria.	Q'land.	S. Aust. (c)	W. Aust.	Tas.	North- ern. (d)	Fed. Cap. (e)	
MALES.									
1861 to 1870	47,905	69,283	8,183	20,526	1,519	7,174	..	..	154,590
1871 to 1880	64,107	67,117	14,664	23,655	1,733	6,549	..	..	177,825
1881 to 1890	97,411	73,142	25,858	33,488	2,757	11,377	..	..	244,033
1891 to 1900	105,526	79,251	38,249	28,320	4,838	13,262	..	..	269,446
1901 to 1910	115,306	73,280	38,043	26,649	19,045	16,658	— 487	..	288,494
1911 to 1920	149,100	87,548	54,391	35,086	22,517	18,059	— 326	153	366,528
1921 ..	16,515	9,626	6,241	3,467	1,779	1,778	— 31	12	39,387
1922 ..	17,204	10,551	5,891	3,613	2,169	1,911	— 14	12	41,337
1861 to 1922	613,074	469,798	191,520	174,804	56,357	76,768	— 858	177	1,581,640

FEMALES.

1861 to 1870	56,670	80,534	11,137	21,210	2,406	9,059	..	..	181,016
1871 to 1880	75,843	79,023	21,997	25,552	2,840	8,891	..	..	214,146
1881 to 1890	112,294	87,964	39,500	35,353	4,347	13,592	..	..	293,050
1891 to 1900	121,037	93,664	49,794	30,235	10,430	14,499	..	..	319,659
1901 to 1910	130,460	82,460	48,958	27,455	24,822	16,549	61	..	330,765
1911 to 1920	168,873	93,144	65,736	36,143	29,447	18,425	197	150	412,115
1921 ..	18,095	9,800	6,946	3,525	2,548	1,780	30	11	42,735
1922 ..	18,800	10,582	6,944	3,780	2,795	1,909	24	14	44,848
1861 to 1922	702,072	537,171	251,012	183,253	79,635	84,704	312	175	1,838,334

PERSONS.

1861 to 1870	104,575	149,817	19,320	41,736	3,925	16,233	..	..	335,606
1871 to 1880	139,950	146,140	36,661	49,207	4,573	15,440	..	..	391,971
1881 to 1890	209,705	161,106	65,358	68,841	7,104	24,969	..	..	537,083
1891 to 1900	226,563	172,915	88,043	58,555	15,268	27,761	..	..	589,105
1901 to 1910	245,766	155,740	87,001	54,104	43,867	33,207	— 426	..	619,259
1911 to 1920	317,973	180,692	120,127	71,229	51,964	36,484	— 129	303	778,643
1921 ..	34,610	19,426	13,187	6,992	4,327	3,558	— 1	23	82,122
1922 ..	36,004	21,133	12,835	7,393	4,964	3,820	10	26	86,185
1861 to 1922	1,315,146	1,006,969	442,532	358,057	135,992	161,472	— 546	352	3,419,974

(a) Excess of births over deaths. (b) Including Federal Capital Territory prior to 1911.

(c) Including Northern Territory prior to 1901. (d) Included in South Australia prior to 1901.

(e) Part of New South Wales prior to 1911.

NOTE.—Minus sign — denotes excess of deaths over births.

In the natural increase females have exceeded the males during the period under review. This is due to the higher death rate among males, the effect of which is augmented by the larger number of males subject to the greater risk of death. Although males predominate in both births and deaths, they exceed the females to a greater degree in the deaths than in the births.

(ii) *Comparison with Other Countries.*—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is very low. The following table gives a comparison between the average rates per annum of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of Australia and the Dominion of New Zealand :—

NATURAL INCREASE PER ANNUM PER 1,000 OF MEAN POPULATION.

(VARIOUS COUNTRIES.)

Country.	Natural Increase per 1,000.	Country.	Natural Increase per 1,000.
Australasia (1918–22)—		Europe— <i>continued</i> .	
Tasmania	16.97	Switzerland	(f) 4.64
Queensland	16.28	Spain	(d) 4.60
New South Wales	15.37	Ireland	(e) 3.89
Australia	14.29	Belgium	(e) —1.08
South Australia	14.06	Asia—	
Western Australia	13.30	Japan	(f) 11.69
New Zealand	13.00	Ceylon	(d) 8.92
Victoria	11.79	Africa—	
Europe—		Union of South Africa	
Netherlands	(e) 12.25	(whites only)	(c) 17.62
Norway	(a) 11.82	America—	
Denmark	(e) 10.93	Province of Quebec	(e) 19.73
Finland	(b) 9.14	Jamaica	(b) 12.56
Scotland	(f) 8.54	Province of Ontario	(e) 10.06
Italy	(b) 8.11	Chile	(d) 10.27
France	(d) 7.53		
England and Wales	(f) 7.20		
Sweden	(f) 6.85		

(a) 1911–15. (b) 1913–17. (c) 1914–18. (d) 1915–19. (e) 1916–20. (f) 1917–21.

NOTE.—The minus sign (–) indicates a decrease.

Graphs of natural increase for each of the States, as well as for Australia accompany this chapter.

2. **Net Immigration.***—The other factor of increase in the population, viz., the excess of arrivals over departures, known as “net immigration” is, from its nature, much more subject to variations than is the factor of “natural increase.” These variations are due to numerous causes, some of which are referred to later in this chapter, in dealing with the influences which affect the growth of population.

* The subject of immigration is dealt with at some length later in this chapter.

POPULATION.—INCREASE BY NET IMMIGRATION, 1861 TO 1922 INCLUSIVE.

Period.	States.						Territories.		
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Fed. Cap. (c)	Total.
MALES.									
1861 to 1870	26,365	— 2,355	44,221	10,028	4,395	— 3,310	..	..	79,344
1871 to 1880	68,724	— 13,789	40,128	28,889	— 259	502	..	..	124,195
1881 to 1890	100,341	71,819	73,381	— 14,877	9,112	4,508	..	..	244,284
1891 to 1900	7,817	— 72,997	13,183	— 9,732	76,396	48	..	..	14,715
1901 to 1910	26,828	— 28,571	12,786	— 441	28,838	— 7,555	— 1,063	..	30,822
1911 to 1920	61,633	19,773	16,651	3,657	— 3,593	— 9,666	499	— 60	88,894
1921 ..	— 61	1,476	2,111	3,377	— 174	989	— 162	54	7,610
1922 ..	6,092	13,170	5,004	1,718	2,717	— 2,443	— 164	303	26,397
1861 to 1922	297,739	— 11,474	207,465	22,619	117,432	— 16,927	— 890	297	616,261
FEMALES.									
1861 to 1870	18,506	38,229	23,675	7,200	1,469	— 1,858	..	..	87,221
1871 to 1880	34,476	2,329	18,979	13,751	112	— 2,038	..	..	67,609
1881 to 1890	62,087	42,198	42,337	— 11,410	2,725	520	..	..	138,457
1891 to 1900	12,650	— 37,433	505	— 5,663	39,801	304	..	..	10,164
1900 to 1910	10,956	— 21,974	5,382	— 4,045	24,160	— 4,749	— 67	..	9,663
1911 to 1920	69,906	26,036	14,830	9,252	6,120	— 7,869	318	84	118,677
1921 ..	1,645	1,875	2,309	1,036	239	1,017	— 92	15	8,044
1922 ..	2,920	5,236	2,220	1,672	212	— 769	— 29	164	11,626
1861 to 1922	213,146	56,496	110,237	11,793	74,838	— 15,442	130	263	451,461
PERSONS.									
1861 to 1870	44,871	35,874	67,896	17,228	5,864	— 5,168	..	..	166,565
1871 to 1880	103,200	— 11,460	59,107	42,640	— 147	— 1,536	..	..	191,804
1881 to 1890	162,428	114,017	115,718	— 26,287	11,837	5,028	..	..	382,741
1891 to 1900	20,467	— 110,430	13,688	— 15,395	116,197	352	..	..	24,879
1901 to 1910	37,784	— 50,545	18,168	— 4,486	52,998	— 12,304	— 1,130	..	40,485
1911 to 1920	131,539	45,809	31,481	12,909	2,527	— 17,535	817	24	207,571
1921 ..	1,584	3,351	4,420	4,413	65	2,006	— 254	69	15,654
1922 ..	9,012	18,406	7,224	3,390	2,929	— 3,212	— 193	467	38,023
1861 to 1922	510,885	45,022	317,702	34,412	192,270	— 32,369	— 760	560	1,067,722

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) indicates the excess of departures over arrivals.

From 1860 to 1922 the increment to the population arising from the excess of births over deaths amounted to 3,419,974 or 76.21 per cent. of the total increase, while the increase from net immigration amounted to 1,067,722 or 23.79 per cent. During the 22 years of the present century the total increase to the population was made up of 1,566,209, or 83.84 per cent. natural increase and 301,733 or 16.16 per cent. by net immigration. The greatest increase to the population by net immigration which has occurred in any one decade was during the ten years 1881 to 1890. This period, however, concluded in world wide speculation which in Australia took the form of speculation in land values, and the effect of the financial collapse which followed this boom is shown by the small increment by migration from 1891 to 1910. For many of the years during this last mentioned period there was an actual loss to Australian population by net migration.

In 1907 the stream of migration again turned in favour of Australia, and during the five years 1909–1913 the net immigration represented 281,193. The war interrupted the flow, but in 1922 the net immigration represented 38,023 persons.

3. **Total Increase.**—The total increase of the population is obtained by the combination of the natural increase with the net immigration.

The following table gives the total increase in each decade from 1861 to 1920 and for the years 1921 and 1922 :—

POPULATION.—TOTAL INCREASE, 1861 TO 1922.

Period.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Fed. Cap. (c)	
MALES.									
1861 to 1870	74,270	66,928	52,404	30,554	5,914	3,864	..	..	233,934
1871 to 1880	132,831	53,328	54,792	52,544	1,474	7,051	..	..	302,020
1881 to 1890	197,752	144,961	99,239	18,611	11,869	15,885	..	..	488,317
1891 to 1900	113,343	6,254	51,432	18,588	81,234	13,310	..	..	284,161
1901 to 1910	142,134	44,709	50,829	26,208	47,883	9,103	1,550	..	319,316
1911 to 1920	210,733	107,321	71,042	38,743	18,924	8,393	173	93	455,422
1921 ..	16,454	11,102	8,352	6,844	1,605	2,767	193	66	46,997
1922 ..	23,296	23,721	10,895	5,331	4,886	532	178	315	67,734
1861 to 1922	910,813	458,324	398,985	197,423	173,789	59,841	1,748	474	2,197,901
FEMALES.									
1861 to 1870	75,176	118,763	34,812	28,410	3,875	7,201	..	..	268,237
1871 to 1880	110,319	81,352	40,976	39,303	2,952	6,853	..	..	281,755
1881 to 1890	174,381	130,162	81,837	23,943	7,072	14,112	..	..	431,507
1891 to 1900	133,687	56,231	50,299	24,572	50,231	14,803	..	..	329,823
1900 to 1910	141,416	60,486	54,340	23,410	48,982	11,800	6	..	340,428
1911 to 1920	238,779	119,180	80,566	45,395	35,567	10,556	515	234	530,792
1921 ..	19,740	11,675	9,255	4,561	2,787	2,797	62	26	50,779
1922 ..	21,720	15,818	9,164	5,452	3,007	1,140	5	178	56,474
1861 to 1922	915,218	593,667	361,249	195,046	154,473	69,262	442	438	2,289,795
PERSONS.									
1861 to 1870	149,446	185,691	87,216	58,964	9,789	11,065	..	..	502,171
1871 to 1880	243,150	134,680	95,768	91,847	4,426	13,904	..	..	583,775
1881 to 1890	372,133	275,123	181,076	42,554	18,941	29,997	..	..	919,824
1891 to 1900	247,030	62,485	101,731	43,160	131,465	28,113	..	..	613,984
1901 to 1910	283,550	105,195	105,169	49,618	96,865	20,903	1,556	..	659,744
1911 to 1920	449,512	226,501	151,608	84,138	54,491	18,949	688	327	986,214
1921 ..	36,194	22,777	17,607	11,405	4,392	5,564	255	92	97,776
1922 ..	45,016	39,539	20,059	10,783	7,893	608	183	493	124,208
1861 to 1922	1,826,031	1,051,991	760,234	392,469	328,262	129,103	1,306	912	4,487,696

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes decrease.

For Australia as a whole the greatest numerical increase during any decennial period occurred in the decade 1911 to 1920. The increase during this decade amounted to 986,214, or 22.29 per cent. The greatest proportional increase, on the other hand,

occurred during the decade 1881–1890 when it amounted to 919,824, which, on the smaller population of that time represented an increase of 41.22 per cent. for the decade. Of this increase of 919,824, 537,083 or 58.38 per cent. was from the excess of births over deaths, whereas during the decade 1911–1920, of the total increase of 986,214 the natural increase produced 778,643 or 78.96 per cent. A graph showing the increase in the population of each State and of Australia from year to year since 1860 accompanies this chapter.

As regards the individual States the maximum increases in any decennium are as follows:—New South Wales, 449,512, in 1911–20; Victoria, 275,123, in 1881–90; Queensland, 181,076, in 1881–90; South Australia, 91,847, in 1871–80; Western Australia, 131,465, in 1891–1900; Tasmania, 29,997, in 1881–1890.

4. Rates of Increase.—(i) *For various Countries.* The table hereunder gives rates of increase in population for Australia, and its component States, and for other countries:—

POPULATION.—RATES OF INCREASE (VARIOUS COUNTRIES), 1887 TO 1922.

Countries.	Annual Rate of Increase in Population during period—							
	1887 to 1891.	1892 to 1896.	1897 to 1901.	1902 to 1906.	1907 to 1911.	1912 to 1916.	1917 to 1921.	1922.
AUSTRALASIA—	%	%	%	%	%	%	%	%
Australia ..	3.06	1.86	1.49	1.38	2.03	1.95	1.99	2.25
New South Wales(a)	3.23	1.99	1.57	1.99	2.03	2.61	2.17	2.12
Victoria ..	3.12	0.37	0.52	0.18	2.17	1.38	1.68	2.55
Queensland ..	3.80	2.49	2.25	1.35	2.76	2.20	2.21	2.61
South Australia (b)	1.15	1.63	0.77	0.27	2.46	1.52	2.34	2.14
Western Australia	5.54	20.81	7.25	6.22	2.43	1.76	1.27	2.35
Tasmania ..	2.87	1.06	1.83	1.33	0.65	0.58	1.84	0.28
New Zealand ..	1.47	2.41	1.98	2.86	2.56	1.61	2.32	2.05
EUROPE—								
England and Wales	1.11	1.15	1.15	1.04	1.04	−0.95	1.89	0.72
Scotland ..	0.75	1.06	1.06	0.55	0.56	0.31	0.24	0.45
Ireland ..	−0.94	−0.60	−0.43	−0.22	−0.06	−0.21	0.58	..
Austria ..	0.83	0.79	1.05	0.87	0.86	(c) 0.80	(h)	..
Belgium ..	0.75	1.15	0.92	1.26	0.69	(d) 0.99	(g) −0.19	..
Denmark ..	0.87	0.99	1.32	1.12	1.26	1.20	2.13	..
Finland ..	1.51	1.20	1.41	1.36	1.43	1.18	0.25	..
France ..	0.06	0.09	0.24	0.15	0.16	(d) 0.12	(i) −0.88	..
Germany ..	1.09	1.17	1.51	1.46	1.36	(e) 1.24	(h)	..
Hungary ..	1.01	0.92	1.03	0.77	0.84	(c) 0.84	(h)	..
Italy ..	0.71	0.68	0.61	0.52	0.80	1.16	..	..
Netherlands ..	1.03	1.28	1.30	1.53	1.22	1.72	1.20	..
Norway ..	0.54	0.96	1.31	0.52	0.66	(f) 0.98	..	..
Prussia ..	1.15	1.29	1.59	1.57	1.48	(d) 1.29	(h)	..
Rumania ..	1.34	1.15	1.41	1.46	1.48	(f) 2.77	(h)	..
Serbia ..	2.08	1.37	1.57	1.52	1.55	(c) 1.72	(h)	..
Spain ..	0.48	0.45	0.45	0.52	0.87	0.66	(g) 0.34	..
Sweden ..	0.40	0.61	0.86	0.61	0.84	0.70	0.64	..
Switzerland ..	0.40	1.22	1.10	1.28	1.17	0.81	..	..
ASIA—								
Ceylon ..	1.35	1.41	2.03	1.62	1.20	1.71	1.28	..
Japan ..	1.12	0.96	1.25	1.29	1.08	1.42	0.37	..
AMERICA—								
Canada ..	1.08	0.97	1.19	2.99	2.99	(e) 3.87	..	..
Chile ..	0.72	2.66	0.90	1.53	1.56	1.66	0.07	..
Jamaica ..	1.37	1.66	1.72	1.63	0.28	1.36	(g) 0.62	..
United States ..	2.15	1.93	2.02	2.00	1.82	1.67	1.21	..

(a) Including Federal Capital Territory. (b) Including Northern Territory. (c) 1911 to 1912.

(d) 1911 to 1913. (e) 1911 to 1914. (f) 1911 to 1915. (g) 1916 to 1920.

(h) Not available owing to changes of boundaries. (i) Three years, 1916 to 1919.

NOTE.—The minus sign (−) denotes decrease.

(ii) *Variations in the Rates.*—The fluctuations in the rates of increase in the population of Australia are, for the greater part, due to variations in the volume of immigration. The more important of these periodic variations, so far as they affected the population of Australia as a whole, have been referred to in the preceding sub-sections dealing with net immigration. The large increase in the population of Western Australia during the quinquennium 1892–6 marks the opening up of the gold mines of that State.

§ 5. Seasonal Variations of Population.

1. *Variations in Natural Increase.*—The following table shows the natural increase to the population, during each quarter of the year, based on the experience of the ten years 1913–1922. For Australia as a whole, the rate of natural increase was greatest in the quarter ended 31st March, and least in the quarter ending 31st December, the difference between the rates of increase for these two periods being equal to 18 persons for every 100,000 of the population. In New South Wales and Victoria, the March quarter was the most favourable, in Western Australia the March and September quarters were equally so, in Queensland and South Australia the June quarter, and in Tasmania the September quarter. The natural increase was lowest in Victoria, Queensland, South Australia, and Western Australia in the December quarter, and in New South Wales and Tasmania in the June quarter. The differences between the least favourable and the most favourable quarters ranged from 6 per 100,000 of the population in Victoria to 49 per 100,000 in Western Australia.

During recent years, there have been two unusual occurrences which have considerably disturbed the normal contributions of the several quarters. The first of these was the payment of the Maternity Allowance which commenced on the 10th October, 1912, with the result that births were registered in the December quarter of that year, which otherwise would not have been registered until the March quarter of the following year. As the results given in this connexion are the averages for decennial periods, this factor is present in the results given for the December quarter up to and including the decade 1912–21, but, with the increasing population it became less important from year to year. Although this factor did not seriously disturb the order of increase in the various quarters, it very materially reduced the margins between the highest and the lowest quarters.

The other disturbance referred to was the influenza epidemic of 1919. The total number of deaths during 1919, for which influenza was stated to be the primary cause, was 11,989, which were distributed over the four quarters of the year as follows:—March quarter, 926; June quarter, 5,958; September quarter, 4,658; December quarter, 447. Prior to this epidemic, the September quarter had been consistently the highest, and the June quarter had been, almost invariably, next in order during each decade from 1901–10 to 1909–18, while the March quarter had been almost consistently the lowest. The same consistency, however, did not prevail throughout the individual years. The deaths from influenza in the June and September quarters, and the comparative freedom of the March quarter from such deaths, have given the March quarter precedence in the four successive decennial periods in which the year 1919 is included. During the same periods, the September quarter has been consistently second and the December quarter has most frequently been the lowest.

The precedence—with regard to its contribution to the natural increase in population—which was so consistently held by the September quarter prior to the influenza epidemic of 1919, was due entirely to its higher birth rate. With the exception of the year 1915, the September quarter was distinguished by a greater number of births than any other quarter in each of the 17 years 1906–22, and with the exceptions of 1915 and 1919, it

showed the greatest birth rate per 1,000 persons. On the other hand, with the same two exceptions, the September quarter showed the highest death rate per 1,000. The high death rate in conjunction with the high birth rate is due in some measure to the increased risk, from the greater number of births, of infantile deaths and deaths in childbirth.

POPULATION.—AVERAGE QUARTERLY NATURAL INCREASE, 1913 TO 1922.

State or Territory.	Average Natural Increase for Quarter ended on last day of—								Average Natural Increase per Annum, 1913–22.	
	March.		June.		September.		December.			
	Persons.	%	Persons.	%	Persons.	%	Persons.	%	Persons.	%
N.S.W.	8,313	4.28	7,888	4.04	8,251	4.20	8,068	4.09	32,520	16.74
Victoria	4,626	3.19	4,609	3.17	4,604	3.16	4,584	3.13	18,423	12.71
Q'land.	3,100	4.43	3,201	4.54	3,148	4.41	2,940	4.09	12,389	17.69
S. Aust.	1,786	3.89	1,826	3.97	1,797	3.89	1,676	3.61	7,085	15.42
W. Aust.	1,301	4.09	1,300	4.08	1,312	4.09	1,160	3.60	5,073	15.95
Tas. ..	902	4.44	881	4.36	941	4.69	932	4.64	3,656	18.01
N. Ter.	— 3	— 0.72	2	0.48	2	0.47	— 6	— 1.39	— 5	— 1.20
F.C.Ter.	8	3.95	7	2.73	9	3.50	6	2.32	30	14.83
Total	20,033	3.94	19,714	3.86	20,064	3.91	19,360	3.76	79,171	15.59

NOTE.—The minus sign (—) indicates an excess of deaths over births, and °/° denotes “per thousand.”

2. **Variations in Net Immigration.**—In the following table the figures relating to the separate States and Territories include interstate migrants, but so far as these persons are concerned, the arrivals into any State are departures from some other State, so that they do not affect the figures shown for Australia as a whole, which, therefore, represent the overseas arrivals and departures. For each of the decades from 1901–1910 to 1904–1913 inclusive, the December quarter showed the greatest rate of increase from migration, with the other quarters consistently in order directly reverse to their position on the calendar. The dispatch of troops from Australia during November and December, 1914, and the effects of the war on the overseas passenger traffic, altered the position so that in the decade 1905–14, and in each decade since, the September quarter has been the highest, with the March quarter second. On the average, however, of the three years 1920–22, which were not seriously affected by the movements of troops, the December quarter again has first place. The precedence of the December quarter during the last three years was due rather to the small number of departures (22.51 per cent.) than to the large number of arrivals (24.98 per cent.) during that quarter. The normal quota for each quarter would of course be 25 per cent. in both cases. Notwithstanding that the interstate movement is very much greater than the overseas migration, the results shown in the following table are to some extent vitiated in their application to the particular States, by the inclusion of the war period. For instance, the losses shown for New South Wales in the December quarter, for Victoria in the June quarter, and for South Australia in the March and June quarters are entirely due to large embarkations of troops during those periods of the years 1914, 1915, and 1916. Although it is usual for Queensland to show a loss of population during the December quarter, owing to the return of sugar workers and tourists to the southern States, the loss for the decade 1913–22 is aggravated by the dispatch of troops. Again, Western Australia shows an annual loss of population by emigration, the quarters in which these losses occurred coinciding with times of heavy embarkations. The gain to Tasmania in the December quarter represents the influx of tourists from the mainland, whereas the loss during the remainder of the year represents the departure of tourists and of other persons to the number of 1,348 per year.

POPULATION.—AVERAGE QUARTERLY NET IMMIGRATION, 1913 TO 1922.

State or Territory.	Quarter ended on last day of—								Average Net Immigration per Annum, 1913–22.	
	March.		June.		September.		December.			
	Persons.	°/°	Persons.	°/°	Persons.	°/°	Persons.	°/°	Persons.	°/°
N.S.W.	3,435	1.77	174	0.09	3,384	1.72	— 820	— 0.42	6,173	3.18
Victoria	1,122	0.77	— 1,424	— 0.98	988	0.68	1,680	1.15	2,366	1.63
Q'land.	1,857	2.65	5,811	8.24	1,345	1.88	— 6,283	— 8.74	2,730	3.90
S. Aust.	— 672	— 1.46	— 779	— 1.69	862	1.87	1,547	3.33	958	2.09
W. Aust.	— 365	— 1.15	336	1.05	545	1.70	— 1,840	— 5.71	— 1,324	— 4.16
Tas. . .	— 1,920	— 9.46	— 2,277	— 11.27	— 645	— 3.22	3,494	17.39	— 1,348	— 6.64
N.T. . .	30	7.17	81	19.24	14	3.26	— 108	— 25.06	17	4.07
F.C.Ter.	532	262.98	4	1.56	— 19	— 7.38	— 486	— 187.86	31	15.32
Total	4,019	0.79	1,926	0.38	6,474	1.26	— 2,816	— 0.55	9,603	1.89

NOTE.—The minus sign (—) denotes excess of departures over arrivals, and °/° denotes “ per thousand ” of population.

§ 6. Influences affecting Increase and Distribution.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by comparing the increase during the ten years preceding with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (from 190,408 to 405,356). During the succeeding decennium there was an increase of 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase per annum to the population of Australia, which in 1855 amounted to 98,343, and even in 1860 was as much as 48,280, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 6,283, the gain of 22,564 being due to the births exceeding the deaths by 28,847.

In 1886 and subsequent years the gold discoveries of Western Australia led to such extensive migration to that State that its population, which on 31st December, 1885, amounted to only 35,959, increased during the next twenty years by 595 per cent., or by 10.18 per cent. per annum, to 250,138 in 1905. In this case, however, the additions to the population of the western State were largely drawn from the eastern States, so that the actual gain of population to Australia was relatively small.

2. **Pastoral Development.**—Very early in the colonization of Australia it was recognized that large areas were well adapted for pastoral pursuits, and pastoral developments led to the spread of population in various directions. As the numbers engaged in connexion therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of the pastoral industry is not noticeably reflected in the population statistics.

3. **Agricultural Expansion.**—At the present time the area under crop in Australia is over 15 million acres. Although substantial in itself, this area, viewed in relation to the total area of Australia, is relatively small, and represents only 0.81 per cent. of the total area. Per head of population the area under crop, however, is $2\frac{3}{4}$ acres, a fairly large area when allowance is made for the recency of Australian settlement. About 83 per cent. of the area under crop in 1921–22 was devoted to the production of wheat and hay, both of which, for profitable production in Australia, require a considerable area

in the one holding. Consequently, the agricultural districts are for the most part sparsely populated, though in a less marked degree than the pastoral areas.

4. Progress of Manufacturing Industries.—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities to an extent which, when compared with that of the rest of the country, appears somewhat abnormal.

5. Influence of Droughts.—Droughts, which at times so seriously affect the agricultural and pastoral industries of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons are fairly populous, become more or less depopulated in times of drought. This movement, however, ordinarily affects only the internal distribution of the population, and not the total, but severe drought may even make its influence felt in the statistics of the total population. Thus, in the case of the drought of 1902–3, the departures from Australia exceeded the arrivals for the two years 1903 and 1904 by 12,859. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding, and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

6. Assisted Immigration.—Assisted immigration has been a factor of some importance in the increase of population. The number of persons brought to Australia by this means has varied considerably in different periods, according to the activities of Governments in this direction. The table given in sub-section 5 of § 10 hereinafter shows that 887,791 persons have been brought to Australia in connexion with schemes for assisting immigration.

7. Other Influences.—(i) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in the early nineties of last century, is clearly indicated by comparing the migration statistics of Australia for the five years 1887 to 1891 with those for the five years 1892 to 1896. During the earlier period the arrivals exceeded the departures by 146,872, whereas in the later period the excess of arrivals was only 2,064.

(ii) *War.* The war in South Africa left its impress on the population statistics of Australia, the departures during 1899 and 1900 exceeding the arrivals by 10,546. The effect of the recent European war is, of course, much more marked.

§ 7. Density.

1. General.—From certain aspects population may be less significant in respect of its absolute amount than in its relation to the area of the country. Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1922, of 5,693,492, including aboriginals, has a density of only 1.91 persons to the square mile, and is, therefore, the most sparsely populated of the civilized countries of the world. For the other continents the densities are approximately as follows:—Europe, 114; Asia, 61; Africa, 11; North and Central America, 17; and South America, 9. The population of Australia has thus about 21 per cent. of the density of South America; about 18 per cent. of that of Africa; about 11 per cent. of that of North and Central America; about 3 per cent. of that of Asia; and about $1\frac{3}{4}$ per cent. of that of Europe.

A map showing the density of population throughout Australia as at the Census of 1921 accompanies this chapter.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been taken from the 1923 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable.

POPULATION, WORLD'S.—NUMBER AND DENSITY—*continued.*

Country.	Population.	Density. (a)	Country.	Population.	Density. (a)
AFRICA— <i>continued.</i>			SOUTH AMERICA.		
Zanzibar	197,000	193.14	Brazil	30,635,605	9.85
Togoland (British) ..	188,265	14.94	Argentine Republic ..	8,750,000	7.59
Réunion	173,190	178.55	Colombia	5,855,077	13.28
Bechuanaland Protectorate	152,983	0.56	Peru	5,550,000	7.68
Spanish Guinea	150,000	13.88	Chile	3,754,723	12.95
Cape Verde Islands ..	149,793	101.21	Bolivia	2,889,970	5.62
Swaziland	133,563	20.00	Venezuela	2,411,952	6.05
Comoro and Mayotte ..	110,000	139.24	Ecuador and Galapagos ..	2,000,000	11.48
St. Thomas and Principe	58,907	163.63	Uruguay	1,494,953	20.72
Seychelles	24,705	158.37	Paraguay	1,000,000	13.21
Ifni	20,000	20.73	Panama Republic	434,208	13.41
Fernando Po, etc. ..	15,896	20.00	British Guiana	307,391	3.44
St. Helena	3,670	78.09	Dutch Guiana	113,181	2.46
Rio de Oro and Adrar ..	495	0.01	French Guiana	44,202	1.38
Ascension	250	7.35	Panama Canal Zone ..	23,671	44.92
Total	131,315,623	10.62	Falkland Islands	2,271	0.36
			South Georgia	1,003	1.00
			Total	65,268,207	8.91
NORTH AND CENTRAL AMERICA.			OCEANIA, ETC.		
United States	105,710,620	34.92	Australia	5,693,492	1.91
Mexico	15,501,684	20.21	New Zealand	1,338,631	12.88
Canada	8,788,483	2.35	Territory of New Guinea	400,000	4.48
Cuba	2,889,004	65.42	Papua	276,888	3.06
Haiti	2,500,000	245.00	Hawaii	255,912	39.68
Guatemala	2,004,900	41.52	Dutch New Guinea ..	195,460	1.22
Salvador	1,526,000	115.82	Fiji	157,266	22.20
Porto Rico	1,299,809	378.40	Solomon Islands (British)	150,675	13.70
Santo Domingo	897,405	46.42	New Hebrides	60,000	10.91
Jamaica	858,188	203.99	New Caledonia	50,608	6.62
Honduras	662,422	14.96	Marshall Islands, etc. ..	45,610	47.51
Nicaragua	638,119	12.35	Western Samoa	38,300	30.40
Costa Rica	576,581	25.07	Gilbert and Ellice Islands		
Trinidad and Tobago ..	365,913	185.18	Colony	36,122	35.73
Newfoundland and Labrador			French Oceania	31,655	20.82
Labrador	262,979	1.62	Tonga	23,562	61.20
Martinique	244,439	634.91	Guam	14,996	71.41
Guadeloupe and Dependencies			Samoa (American) ..	8,058	138.93
Windward Islands ..	229,839	334.04	Nauru	2,129	177.42
Barbados	164,132	318.09	Norfolk Island	717	55.15
Leeward Islands ..	155,820	938.67	Total	8,780,081	2.56
Alaska	122,242	170.97			
Curacao	55,036	0.09	SUMMARY.		
Bahamas	54,963	136.38	Europe	483,580,831	113.73
British Honduras ..	54,963	12.04	Asia	1,006,397,120	60.72
Virgin Islands	45,317	5.27	Africa	131,315,623	10.62
Bermudas	26,051	197.36	America, North and Central	145,682,242	16.93
Greenland	20,127	1,059.31	America, South	65,268,207	8.91
Turk's and Caicos Islands	14,355	0.31	Oceania, etc.	8,780,081	2.56
Cayman Islands	5,612	25.05	Total	1,841,034,104	35.01
St. Pierre et Miquelon ..	5,253	59.02			
	3,918	42.13			
Total	145,682,242	16.93			

(a) Number of persons per square mile.

2. **Position of the British Empire.**—The approximate relationship of the British Empire to the world as a whole in regard to its area and population is given hereunder :—

BRITISH EMPIRE IN RELATION TO THE WORLD.

Particulars.	The World.	British Empire.
Area in square miles (exclusive of Polar Circles)	52,000,000	13,250,000
Population	1,841,000,000	400,000,000
Population per square mile	35.0	30.2

§ 8. General Characteristics.

1. **Sex Distribution.**—The populations of young countries show marked contrasts to those of older countries in their sex composition. In young countries there will be, invariably, a greater number of males than females, whereas in countries which have been long settled there is a reverse tendency. In the older countries the populations have grown almost entirely by the excess of births over deaths, which tends to an equality in the numbers of the sexes. From the table given on page 928, however, it may be noticed, that in many instances, this natural tendency has been deflected to an excess of females. This has been due possibly to the following causes—(a) preponderance of males amongst emigrants; (b) greater propensity of males to travel; (c) employment of males away from the home country in the army, navy, and mercantile marine; (d) effects of war. In a young country, on the other hand, the increase in the population is largely brought about by immigration, in which males preponderate. The pioneering conditions of a young country, naturally, are less attractive to females than to males, and in the case of Australia, the disabilities which are inseparable from the early stages of settlement were aggravated by the great distance from the Mother Country and by the circumstances and methods of colonization, and so accentuated the difference in numbers between the sexes.

Australia presented few attractions to the explorers who visited its shores during the seventeenth and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the American plantations as a domicile for deported convicts, that they looked to this country to relieve their overcrowded gaols.

Information regarding the sexes of the first settlers in Australia is not available, but on the 31st December, 1796—nearly nine years later—there was an excess of 44 males in every 100 of a total population of 4,100.

The subsequent development of the natural industries of the country attracted male rather than female immigrants, and notwithstanding the equalizing tendency of the expanding factor of natural increase, and notwithstanding also the heavy loss of males through the war, the population of Australia, on the 31st December, 1922, contained an excess of 1.77 males in every 100 persons.

The relation between the degree of the development of a country, and the masculinity of its population, is further exemplified by the existing conditions in the various States of Australia. From the table given on page 912, it will be seen that, among the States, the greatest masculinity is associated with the smallest density of population *i.e.*, the masculinity is greater in the less developed States. For instance, in Queensland which embraces over 22 per cent. of the area of Australia, but which holds only 14 per cent. of the total population (1.18 persons per sq. mile) the masculinity is 5.49, and in Western Australia, where the density of population is less (0.35 persons per sq. mile), the masculinity is greater (6.74). On the other hand, in Victoria, where the density is greatest (18.10 persons per sq. mile), there is an excess of females of 0.82 per 100 persons. In fact, if either New South Wales or South Australia be excluded, the indexes to masculinity will fall in reverse sequence to the indexes to density for all the other States.

With regard to the density of its population, the position in South Australia is somewhat unusual, inasmuch as the people of that State are concentrated within a relatively small area, while a great part of its territory carries no population. Consequently the condition of the people of South Australia, in this connexion, is governed by the density of that part of it which is populated.

On pages 163 to 165 in the second issue of this publication a table was included showing the masculinity of the population of each of the States for each year from 1796 to 1907. In the fifth issue, on page 123, the figures in this table for the years 1901 to 1907 were modified in accordance with the results of the Census of 3rd April, 1911.

The figures given in the tables last mentioned represent the number of males to each 100 females, but it is considered that a more satisfactory representation of masculinity is obtained by computing the ratio of the excess of males over females to the total population. This ratio, expressed as a percentage, has now been adopted by the Commonwealth Bureau of Census and Statistics as the "masculinity" of the population, and the ratios so computed are given hereunder for intervals of 10 years from 1800 to 1910 and for the five years 1918 to 1922, for Australia and each of its component States and Territories:—

POPULATION.—MASCULINITY, 1800 TO 1922.

(EXCESS OF MALES OVER FEMALES PER 100 OF POPULATION.)

Year.	States.						Territories.		Total.
	N.S.W.(a)	Victoria.	Q'land.	S.A.(b)	W. Aust.	Tasmania.	North'n (c)	Fed. Cap. (d)	
1800	44.91	..	..	..	..	..	..	..	44.91
1810	31.16	..	..	..	..	..	..	..	31.16
1820	41.81	..	..	..	..	..	..	..	41.81
1830	52.06	..	..	..	49.66	49.17	..	..	51.02
1840	34.25	..	..	13.08	24.10	39.31	..	..	33.72
1850	16.13	..	..	12.72	21.51	28.44	..	..	17.76
1860	13.53	22.74	19.88	2.47	25.07	10.56	..	..	16.72
1870	9.29	9.74	20.10	2.84	23.42	6.09	..	..	9.54
1880	9.28	4.95	17.53	6.69	14.92	5.53	..	..	7.95
1890	8.28	5.06	13.87	4.12	18.98	5.61	..	..	7.43
1900	5.28	0.61	11.24	1.98	22.34	3.83	76.57	..	5.01
1910	4.41	-0.65	8.69	1.54	14.13	2.03	65.89	..	3.79
1918	0.38	-4.81	3.08	-3.99	3.08	-1.33	50.82	5.65	-0.96
1919	2.25	-1.56	5.94	-0.24	6.75	1.33	48.49	5.05	1.74
1920	2.10	-1.36	5.60	-0.11	6.79	0.81	45.84	7.71	1.68
1921	1.92	-1.35	5.41	0.37	6.34	0.80	45.58	9.30	1.60
1922	1.95	-0.82	5.49	0.34	6.74	0.03	43.06	12.87	1.77

(a) Including Federal Capital Territory prior to 1911. (b) Including Northern Territory prior to 1900. (c) Included with South Australia prior to 1900. (d) Part of New South Wales prior to 1911.

NOTE.—The minus sign (-) denotes excess of females over males per 100 of population.

The above table shows clearly the progress towards an equalization of the sexes as the country developed, and conditions suitable to family life became more general.

The effect of the war on the masculinity of the population is very marked. In 1913 there was in Australia as a whole an excess of 4.41 males in every 100 persons, but by 1918 the excess was on the side of females to the extent of 0.96 per 100 persons. This excess of females was experienced in Victoria, South Australia, and Tasmania, but, largely by the return of the military forces, males are again more numerous than females in all the States except Victoria, though in Tasmania the difference in the numbers is very small.

Graphs showing the masculinity of the population of each State and of Australia accompany this chapter.

The difference between young and old countries in the masculinity of their populations is clearly illustrated by the comparisons furnished in the following table, which are based on the latest statistics available. It is interesting to note that of the countries named, Chile is the only non-European country with an excess of females.

POPULATION OF VARIOUS COUNTRIES.—MASCULINITY.

Country.	Year.	Excess of Males over Females in each 100 of Population.	Country.	Year.	Excess of Males over Females in each 100 of Population.
Argentine Republic ..	1918	7.27	Finland ..	1919	-1.20
Canada ..	1911	6.07	Belgium ..	1920	-1.62
Ceylon ..	1921	5.91	Switzerland ..	1910	-1.66
Union of South Africa(a)	1921	2.92	Sweden ..	1921	-1.72
British India ..	1921	2.73	France ..	1911	-1.74
India (Feudatory States)	1921	2.73	Italy ..	1911	-1.81
New Zealand ..	1922	2.03	Denmark ..	1921	-2.44
United States of America	1920	1.98	Norway ..	1920	-2.60
Australia ..	1922	1.77	Spain ..	1910	-2.84
Ireland ..	1919	1.08	Poland ..	1921	-3.37
Rumania ..	1919	0.75	Scotland ..	1921	-3.79
Greece ..	1907	0.68	Austria ..	1920	-4.24
Japan ..	1920	0.22	Prussia ..	1919	-4.49
Bulgaria ..	1921	0.04	England and Wales	1921	-4.54
Chile ..	1920	-0.57	German Empire ..	1919	-4.78
Netherlands ..	1921	-0.62	Portugal ..	1911	-5.08
Russia (European) ..	1914	-1.05			

NOTE.—The minus sign (—) denotes excess of females over males in each 100 of population.
(a) White population only.

2. Age Distribution.—(i.) *Australia*. The causes which brought about the excess of males also made the age constitution of the population of Australia essentially different from that of older countries. The high birth rate of the earlier years, combined with the low average age of immigrants, produced a population in which young and middle-aged persons were above, and the persons of advanced ages were below, the normal proportions. With time, however, these differences have been modified, so that they are no longer important.

The following table shows the proportions of the population of Australia over a period of 60 years, and of England and Wales over a period of 50 years, in three main groups of ages. The percentages are in all cases based on Census results. The Australian figures for 1861 include the results of the Western Australian Census of 1859, and those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870. Similar figures for England and Wales for 1921 are not yet available, consequently, as it is probable that the age composition has been affected by the war, comparisons must be confined to the 50 years ended with 1911.

Throughout the period covered by the table, the age distribution of the Australian population has varied considerably in consequence of the fluctuations of the birth-rate and of net migration. The age composition of the separate sexes also shows marked divergences according to the relative numbers of males and females from time to time in the net immigration. The high percentage of males of working age (15–65) in 1861 was due to the large male element amongst immigrants in that period. The net immigration of males—almost entirely of working age—due to the discovery of gold, was particularly heavy during the fifties. The reaction from this rush of immigration, and the consequent departure of many males, caused a marked fall in the proportion of the “15–65” group, and, of course, a corresponding increase in the proportion under 15 years, during the next decade. The effect of this reaction also influenced the female age composition though to a less extent than that of the males.

The difference between the age composition of the males, as compared with the females in the earlier years under review is most strikingly indicated by the larger proportion of females under 15 years—43.03 per cent., as against a corresponding proportion of males of 31.41 per cent. in 1861. It has already been shown that in 1860 the population of Australia contained an excess of 16.72 males in every 100 persons in consequence of the larger number of male immigrants, also that the male immigrants were almost entirely of working age; it follows, therefore, that the proportion of males under 15 years would be relatively small as compared with females.

It is interesting to note the steady approach to similarity of the age composition of males to that of females in harmony with the equalization of the numbers of each sex in the Australian population, and also the increasing similarity in the composition of the Australian population to that of older countries as represented by England and Wales.

POPULATION.—AGE DISTRIBUTION.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.
AUSTRALIA, 1861 TO 1921.												
1861..	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871..	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881..	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891..	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901..	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100
1911..	30.84	64.82	4.34	100	32.52	63.28	4.20	100	31.65	64.08	4.27	100
1921..	31.67	63.86	4.47	100	31.80	63.83	4.37	100	31.73	63.85	4.42	100

ENGLAND AND WALES, 1861 AND 1911.

1861..	36.69	58.98	4.33	100	34.62	60.44	4.94	100	35.64	59.72	4.64	100
1911..	31.70	63.66	4.64	100	29.64	64.62	5.74	100	30.63	64.16	5.21	100

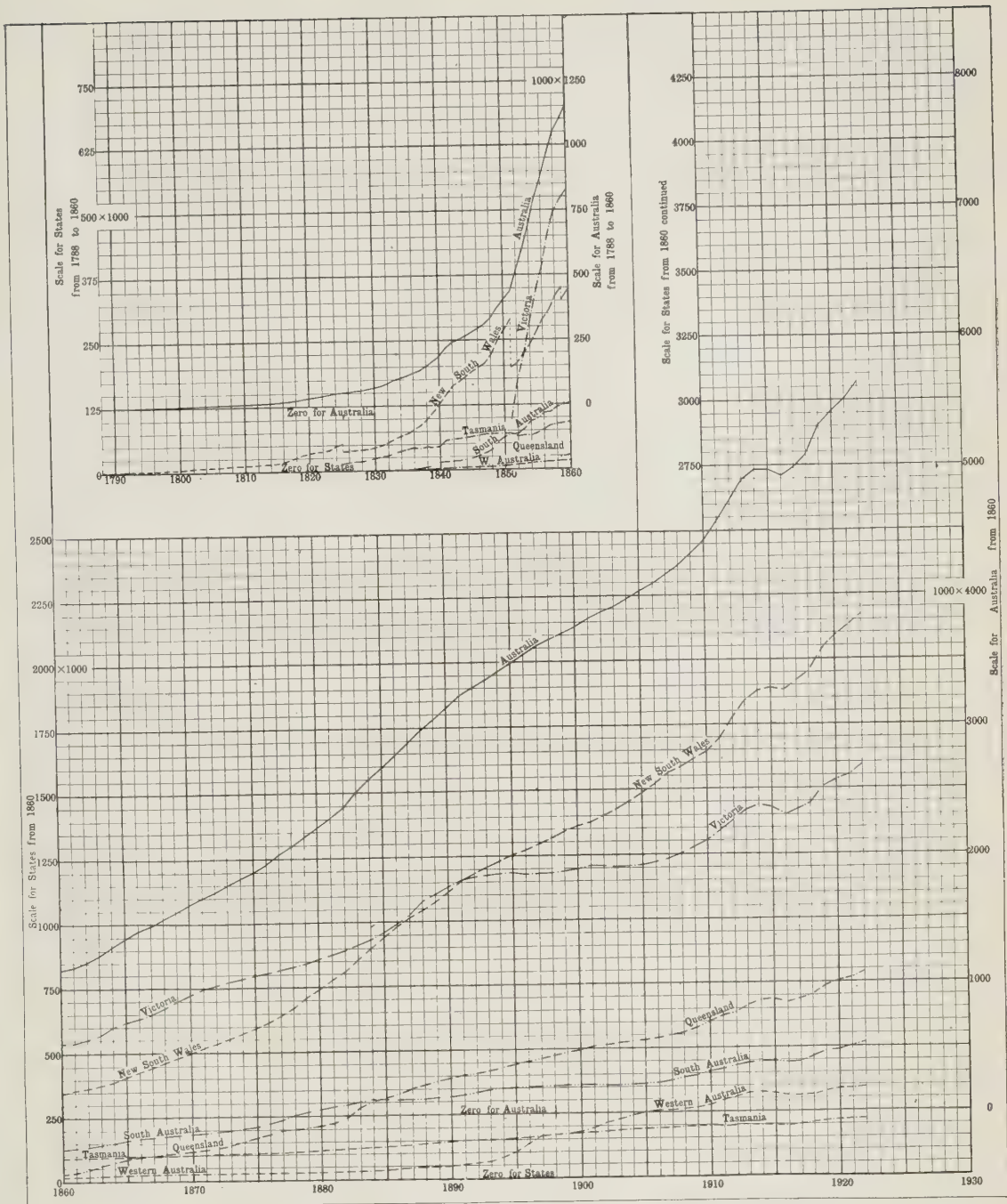
(ii) *States and Territories.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the age distribution. For convenient comparison in respect to ages, the several populations may each be divided into groups, indicative of dependence on the one hand, and ability to support on the other. The usual division for this purpose is into an initial group of "under 15" classed as "dependent age," a second group of "15 and under 65" classed as "supporting age," and a final group of "65 and upwards" classed "old age." From certain points of view the division might be into two classes, the "supporting" and the "dependent," as the majority of those aged "65 and upwards" strictly belong to the dependent class. The number of persons in each State and Territory at the Census of 4th April, 1921, in each of the three groups mentioned, and the proportion to the total for each State or Territory and Australia, were as follows:—

POPULATION.—DEPENDENT, SUPPORTING, AND OLD AGE GROUPS, 4th APRIL, 1921.

(SUBJECT TO REVISION.)

State or Territory.	Number of Persons of—				Proportion of Population of—		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
States—					%	%	%
New South Wales	678,364	1,331,673	90,334	2,100,371	32.30	63.40	4.30
Victoria ..	455,936	1,002,093	73,251	1,531,280	29.78	65.44	4.78
Queensland ..	251,586	474,102	30,284	755,972	33.28	62.71	4.01
South Australia	156,636	313,242	25,282	495,160	31.63	63.26	5.11
Western Australia	107,394	214,553	10,785	332,732	32.28	64.48	3.24
Tasmania ..	73,444	130,265	10,071	213,780	34.36	60.93	4.71
Territories—							
Northern ..	804	2,858	205	3,867	20.79	73.91	5.30
Federal Capital	840	1,659	73	2,572	32.66	64.50	2.84
Total ..	1,725,004	3,470,445	240,285	5,435,734	31.73	63.85	4.42

TOTAL POPULATION, 1788 TO 1922.



EXPLANATION. YEARS 1788 TO 1860.—The base of each small square represents two years' interval for the States and Australia, and the vertical height for the States 25,000 persons, and for Australia 50,000 persons.

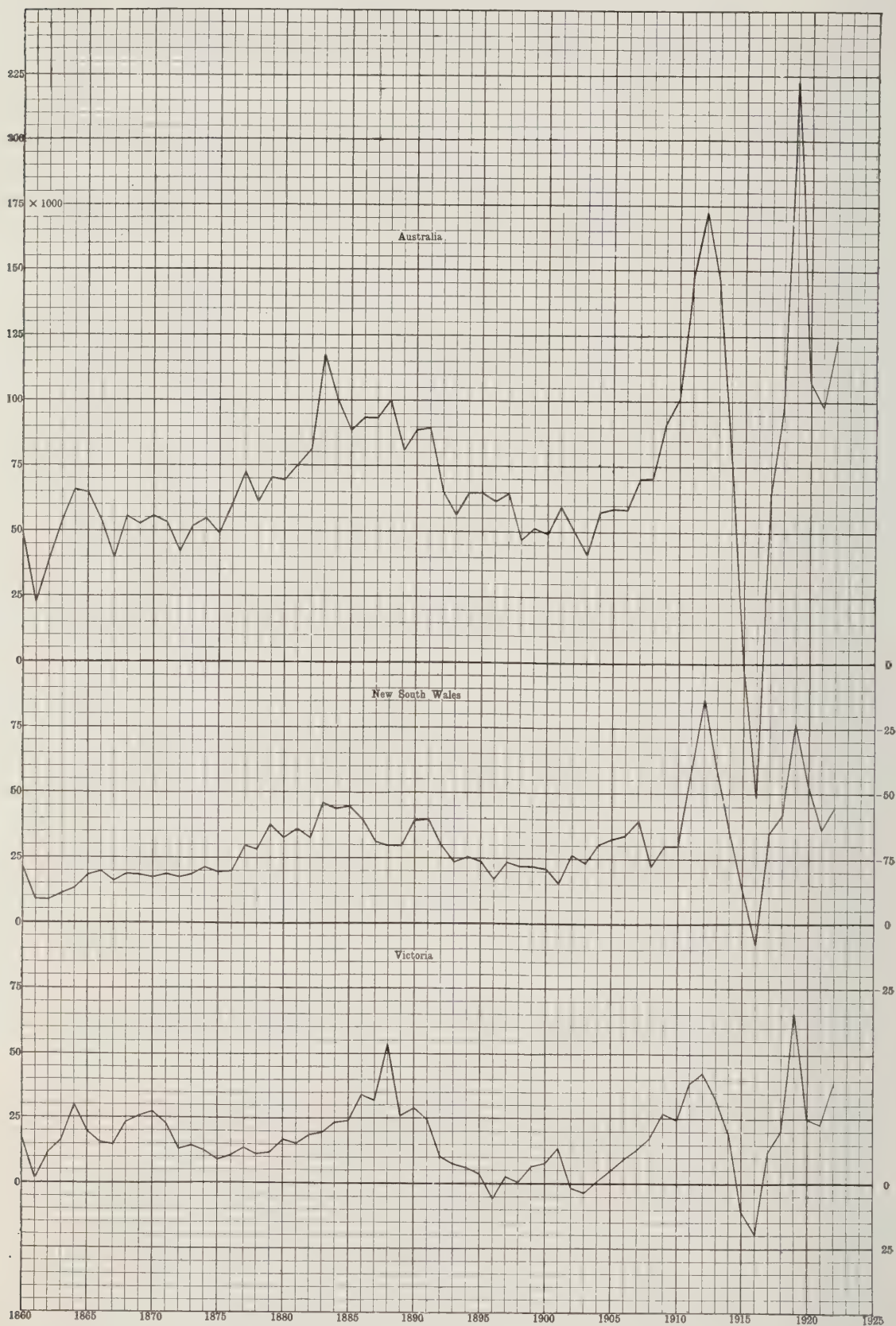
1860 ONWARD.—The base of each small square represents one year's interval for the States and Australia, and the vertical height for the States 50,000 persons, and for Australia 100,000 persons.

In both graphs the zero line for the States is the bottom line ; for Australia it is the line marked "Zero for Australia."

Where the population falls suddenly, the fall denotes the creation of a new colony, *e.g.*, New South Wales in 1825 lost the whole population of Tasmania.

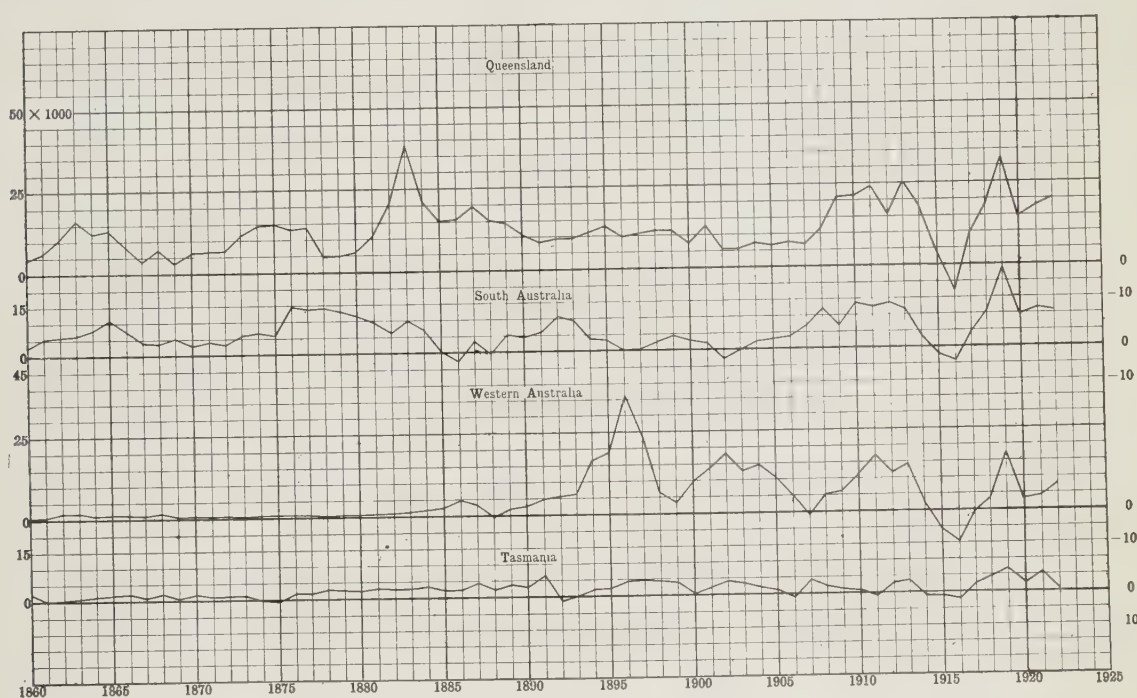
The curves are as follows :—Australia, an unbroken line ; New South Wales, — — — ; Victoria, — — — — ; Queensland, — — — — — ; South Australia, — — — — — ; Western Australia, — — — — — ; Tasmania, — — — — — .

TOTAL INCREASE OF POPULATION—AUSTRALIA, AND NEW SOUTH WALES AND VICTORIA,
1860 TO 1922.



(For explanation see foot of next page.)

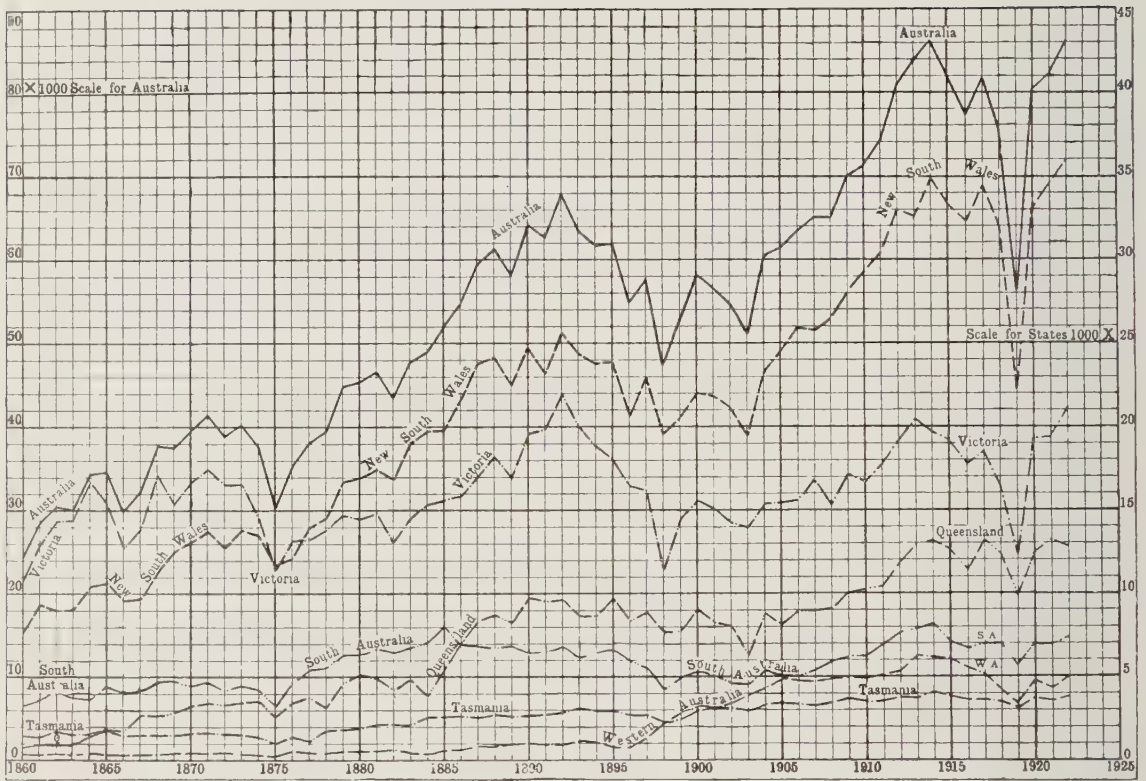
**TOTAL INCREASE OF POPULATION.—QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA,
AND TASMANIA, 1860 TO 1922.**



EXPLANATION.—The base of each small square represents an interval of a year for both States and Australia; the vertical height represents 5,000 persons. In the first graph (on page 932) three zero lines are taken (i) for Australia, (ii) for New South Wales, and (iii) for Victoria. In the second graph four zero lines are taken (i) for Queensland, (ii) for South Australia, (iii) for Western Australia, and (iv) for Tasmania.

DECREASES in population are shown by carrying the curve in such cases below the zero line, the distance below the zero line indicating the extent of the decrease. The scales in these instances are on the right hand side of the graph.

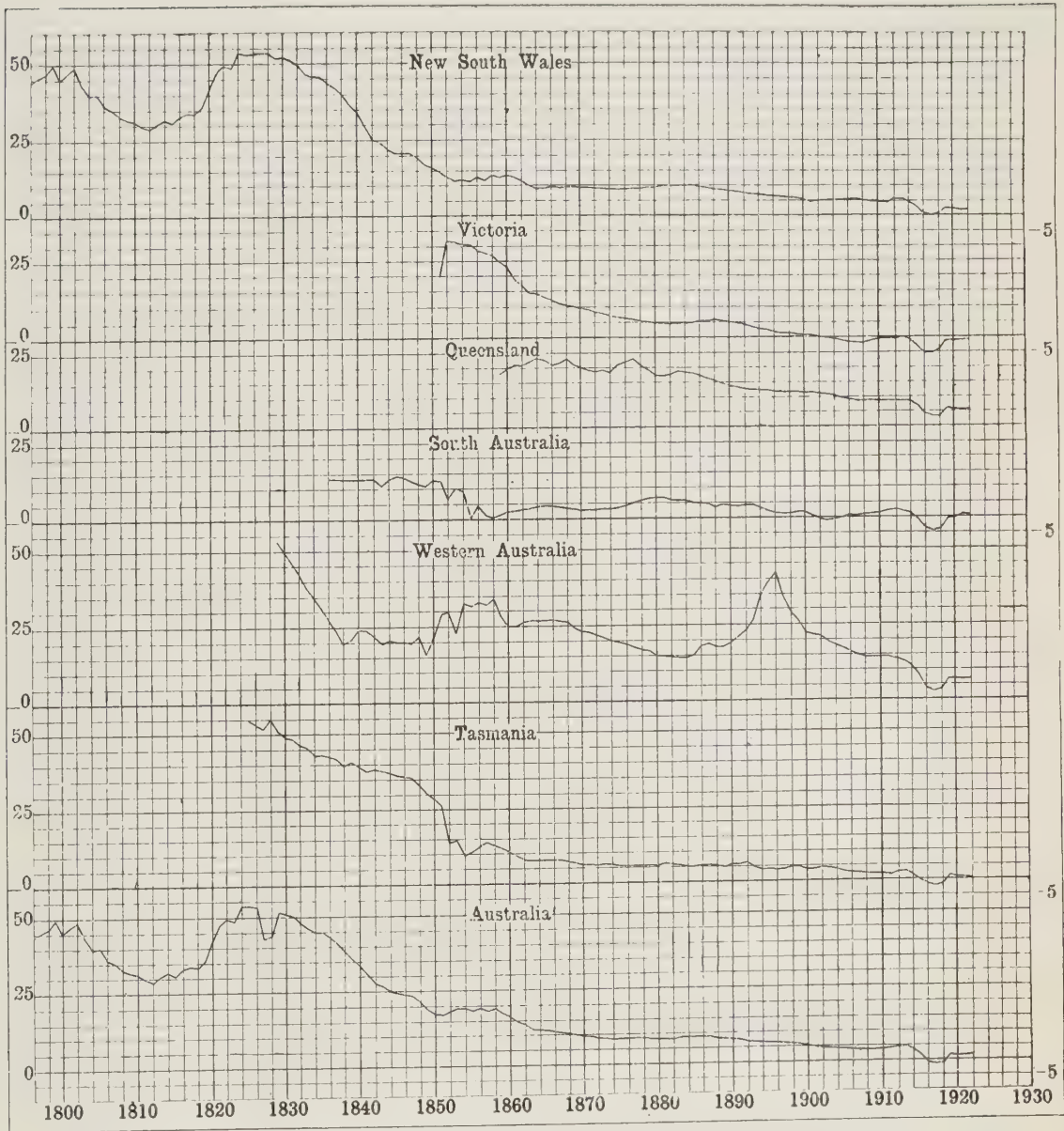
NATURAL INCREASE OF POPULATION, 1860 TO 1922.



EXPLANATION.—The base of each small square represents one year for both States and Australia, and the vertical height 1,000 persons for the States and 2,000 persons for Australia.

The distances upward from the zero line, marked 0 for both Australia and States, denote the excess of births over deaths. The scale on the left relates to Australia, and that on the right to the States. The character of the lines used are as follows:—Australia, ———; New South Wales, ————; Victoria, ————; Queensland, ————; South Australia, ————; Western Australia, ————; Tasmania, ————.

MASCULINITY OF POPULATION—1796 TO 1922.



EXPLANATION.—The base of each small square represents an interval of two years, and the vertical height an excess of five males per 100 of the population. The basic lines (shown thickened) for Australia and all the States are at zero, equivalent to a numerical equality of the sexes.

It will be noticed that in the case of Australia in the years 1916, 1917, and 1918, Victoria in the years 1903 to 1922, South Australia in the years 1902 to 1904 and 1915 to 1920, and Tasmania for the years 1915 to 1918, the curves are below the zero line, thus showing an excess of females over males.

DISTRIBUTION OF POPULATION OF AUSTRALIA ACCORDING TO CENSUS OF 1921.



This chart shows the distribution of the population of Australia at the date of the Census of 1921. For the Local Government areas in each State, and the areas represented have been shaded in accordance with the following scale of density.

(NOTE:—In the portions left blank the population is less than 1 per sq. mile.)

A	From 1 inhabitant in 2 sq. miles to less than 1 in 4 sq. miles	
B	" 1 " " 4 " " " 1 in 1 sq. mile	
C	" 1 " " 1 sq. mile	
D	" 2 inhabitants in 1 " " " 4 in 1 " "	
E	" 4 " " 1 " " " 8 in 1 " "	
F	" 8 " " 1 " " " 16 in 1 " "	
G	" 16 " " 1 " " " 32 in 1 " "	
H	32 inhabitants and upwards in 1 sq. mile	

The cross within the circle in each State represents the "centre of gravity" of the population of that State, and the cross within the single circle in each State represents the "centre of gravity" of the population of the Commonwealth.

Victoria has the highest proportion of the population in the "supporting" age-group, while Tasmania has the lowest proportion. This high proportion in Victoria is largely due to the relatively low birth-rate in that State during the years which produced the lives under 15 years at the Census of 1921. The relatively small proportion of the population in the age group 15-65 in Tasmania is due to the fact that many Tasmanian natives, in their early adult years, seek the wider opportunities available on the mainland.

The following tables show for the several States and Territories and for Australia as a whole the numbers of males and females and of persons in quinquennial age groups, and also the number of minors and adults recorded at the Census of the 4th April, 1921 :—

POPULATION.—IN AGE GROUPS, 4th APRIL, 1921 (EXCLUSIVE OF FULL-BLOOD ABORIGINALS).

(Subject to revision.)

Age last Birthday.	States.						Territories.		Total.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fed. Cap.	
MALES.									
0-4 ..	121,529	79,210	46,174	27,597	17,804	12,872	169	167	305,522
5-9 ..	118,284	79,452	43,849	27,763	19,149	12,776	140	160	301,573
10-14 ..	104,166	72,424	38,020	24,184	17,493	11,494	91	131	268,003
15-19 ..	88,476	66,020	33,241	20,841	14,945	10,130	113	190	233,956
20-24 ..	83,333	62,096	33,008	19,467	12,910	8,654	194	168	219,830
25-29 ..	87,361	62,845	33,525	20,232	12,295	7,907	235	125	224,525
30-34 ..	92,215	59,244	33,653	20,822	12,928	7,617	271	133	226,883
35-39 ..	79,737	50,696	28,085	18,404	12,257	6,875	181	121	196,356
40-44 ..	66,785	44,885	23,875	14,987	12,703	6,014	209	104	169,562
45-49 ..	54,723	39,556	20,022	12,060	12,361	5,157	222	83	144,184
50-54 ..	49,235	40,174	18,572	11,215	11,108	4,947	268	44	135,563
55-59 ..	41,877	35,923	15,844	9,266	8,281	4,383	255	47	115,876
60-64 ..	33,694	26,660	12,330	8,219	5,526	3,584	220	43	90,276
65-69 ..	21,737	15,054	7,918	5,673	3,020	2,331	121	26	55,880
70-74 ..	13,030	9,035	4,688	3,376	1,663	1,380	51	9	33,232
75-79 ..	7,698	5,415	2,748	2,047	859	737	11	11	19,526
80-84 ..	3,402	2,991	1,465	936	367	385	2	1	9,549
85-89 ..	1,251	1,336	432	333	125	142	1	3	3,623
90 and over ..	329	413	125	93	30	40	..	1	1,031
Unspecified ..	2,639	1,295	1,395	752	1,454	318	67	..	7,920
Total ..	1,071,501	754,724	398,969	248,267	177,278	107,743	2,821	1,567	2,762,870
Under 21 ..	449,943	310,250	168,068	104,474	72,346	49,192	550	703	1,155,526
21 and over ..	618,919	443,179	229,506	143,041	103,478	58,233	2,204	864	1,599,424
Unspecified ..	2,639	1,295	1,395	752	1,454	318	67	..	7,920
Total ..	1,071,501	754,724	398,969	248,267	177,278	107,743	2,821	1,567	2,762,870
FEMALES.									
0-4 ..	117,811	76,426	43,974	26,305	17,173	12,674	162	159	294,684
5-9 ..	115,140	77,680	42,806	27,035	18,735	12,507	149	133	294,185
10-14 ..	101,434	70,744	36,763	23,752	17,040	11,121	93	90	261,037
15-19 ..	86,702	64,589	32,229	20,342	14,723	9,721	83	83	228,472
20-24 ..	88,753	67,503	33,309	20,771	12,859	9,118	91	77	232,481
25-29 ..	91,155	69,647	32,203	22,076	12,134	8,794	94	90	236,193
30-34 ..	88,157	63,439	29,205	20,439	11,368	7,945	74	105	220,732
35-39 ..	75,886	53,790	23,622	18,306	10,665	6,862	77	73	189,281
40-44 ..	62,275	47,914	19,446	14,893	10,182	5,844	53	47	160,654
45-49 ..	50,727	42,378	16,171	11,921	9,116	4,791	29	40	135,173
50-54 ..	42,587	40,391	13,941	10,881	7,336	4,300	27	30	119,493
55-59 ..	35,034	34,841	11,077	9,316	5,082	3,800	18	38	99,206
60-64 ..	28,411	27,016	8,595	7,655	3,441	3,283	9	18	78,428
65-69 ..	18,131	15,717	5,371	5,308	2,102	2,077	7	11	48,724
70-74 ..	12,017	10,204	3,464	3,414	1,292	1,317	2	4	31,714
75-79 ..	7,430	6,826	2,292	2,164	746	884	1	4	20,347
80-84 ..	3,367	3,831	1,145	1,164	317	502	1	3	10,330
85-89 ..	1,297	1,672	408	524	123	183	1	..	4,208
90 and over ..	335	575	89	159	23	51	..	..	1,232
Unspecified ..	2,221	1,373	893	468	997	263	75	..	6,290
Total ..	1,028,870	776,556	357,003	246,893	155,454	106,037	1,046	1,005	2,672,864
Under 21 ..	439,139	303,204	162,488	101,596	70,455	47,989	510	480	1,125,861
21 and over ..	587,510	471,979	193,622	144,829	84,002	57,785	461	525	1,540,713
Unspecified ..	2,221	1,373	893	468	997	263	75	..	6,290
Total ..	1,028,870	776,556	357,003	246,893	155,454	106,037	1,046	1,005	2,672,864

POPULATION.—IN AGE GROUPS, 4TH APRIL, 1921 (EXCLUSIVE OF
FULL-BLOOD ABORIGINALS)—*continued*.

Age last Birthday.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed.Cap.	
PERSONS.									
0- 4 ..	239,340	155,636	90,148	53,902	34,977	25,546	331	326	600,206
5- 9 ..	233,424	157,132	86,655	54,798	37,884	25,283	289	293	595,758
10-14 ..	205,600	143,168	74,783	47,936	34,533	22,615	184	221	529,040
15-19 ..	175,178	130,609	65,470	41,183	29,668	19,851	196	273	462,428
20-24 ..	172,086	129,599	66,317	40,238	25,769	17,772	285	245	452,311
25-29 ..	178,516	132,492	65,728	42,308	24,429	16,701	329	215	460,718
30-34 ..	180,372	122,683	62,858	41,261	24,296	15,562	345	238	447,615
35-39 ..	155,623	104,486	51,707	36,710	22,922	13,737	258	194	385,637
40-44 ..	129,060	92,799	43,321	29,880	22,885	11,858	262	151	330,216
45-49 ..	105,450	81,934	36,193	23,981	21,477	9,948	251	123	279,357
50-54 ..	91,822	80,565	32,513	22,096	18,444	9,247	295	74	255,056
55-59 ..	76,911	70,764	26,921	18,582	13,363	8,183	273	85	215,082
60-64 ..	62,105	53,676	20,925	15,874	8,967	6,867	229	61	168,704
65-69 ..	39,868	30,771	13,289	10,981	5,122	4,408	128	37	104,604
70-74 ..	25,047	19,239	8,152	6,790	2,955	2,697	53	13	64,946
75-79 ..	15,128	12,241	5,040	4,211	1,605	1,621	12	15	39,873
80-84 ..	6,769	6,822	2,610	2,100	684	887	3	4	19,879
85-89 ..	2,548	3,008	840	857	248	325	2	3	7,831
90 and over	664	988	214	252	53	91	..	1	2,263
Unspecified	4,860	2,668	2,288	1,220	2,451	581	142	..	14,210
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734
Under 21 ..	889,082	613,454	330,556	206,070	142,801	97,181	1,060	1,183	2,281,387
21 and over	1,206,429	915,158	423,128	287,870	187,480	116,018	2,665	1,389	3,140,137
Unspecified	4,860	2,668	2,288	1,220	2,451	581	142	..	14,210
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734

3. **Race and Nationality.**—(i) *General.* With regard to its racial characteristics, the population of Australia may be divided into two main groups, one comprising the aboriginal natives, and the other consisting of the various immigrant races which have made the country their home. The term “immigrant races,” of course, covers not only those residents of Australia who were born in other countries, but also their descendants who were born in Australia.

(ii) *Aboriginals.* With the assistance of the Chief Protectors of Aboriginals in the several States, an estimate was made at the time of the Census of 1921 of the number of full-blood aboriginals. The numbers so ascertained are shown in the following table. As the Chief Protector for Western Australia estimated that there were 10,000 aboriginals with whom his department was not in touch, that number, equally divided between the sexes, has been included in the tabulated figures.

POPULATION.—FULL-BLOOD AUSTRALIAN ABORIGINALS, 4th APRIL, 1921.

Particulars.	N.S.W.	Victoria.	Queens- land.	South Australia.	Western Australia.	Northern Territory.	Total.
Males	923	62	7,234	876	13,611	9,466	32,172
Females	674	49	5,380	733	11,976	7,883	26,695
Total	1,597	111	12,614	1,609	25,587	17,349	58,867

(iii) *Immigrant Races.* The immigrant races consist mainly of natives of the British Isles and their descendants. Of the total population (5,435,734) enumerated at the Census of 1921, 5,387,423, or over 99 per cent., were of European race. Of the remainder, 30,812 were full-blood, and 17,499 were half-caste non-Europeans.

It may be well to mention here that the Census figures include all persons on board ships which were in Australian waters on the night of the Census. There were on board these ships 4,579 persons of full-blood, and 49 half-castes of non-European race. Included in the 4,579 full-bloods were 1,018 Chinese, 1,330 Japanese, 942 Hindus, and 623 Malays.

The following table shows the number of full-blood and half-caste persons of non-European race—according to continental divisions—who were included in the Census of 1921. Of the 28,087 full-blood Asiatics, 17,009 were Chinese, 2,860 Hindus, 2,856 Syrians, 2,738 Japanese, and 1,083 Malays. The number of full-blood non-Europeans enumerated at the Census of 1921 was less than in 1911 by 6,977, or 18.46 per cent., whereas the half-caste non-Europeans had increased by 2,945, or 20.24 per cent. During the intercensal period the number of full-blood Chinese declined by 5,744, Japanese by 751, and Hindus by 439. It may be noticed that the non-European element is relatively strongest in those parts of Australia where there are bêche-de-mer and pearl fisheries. More detailed information relating to the non-European races in the Australian population may be found in the Census Bulletins.

POPULATION.—NON-EUROPEAN RACES, CENSUS, 4th APRIL, 1921.

(Subject to revision.)

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	Aus-tralian.	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
	Half-caste Aborigines.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.	Full-blood.	Half-caste.
States—													
N.S. Wales ..	4,470	10,626	2,078	69	113	31	33	330	166	31	6	11,087	6,866
Victoria ..	445	4,225	1,280	14	38	11	20	11	7	20	1	4,281	1,791
Queensland ..	3,077	7,043	1,438	42	32	25	21	1,995	244	4	2	9,109	4,814
S. Australia ..	813	1,216	230	13	5	17	6	..	3	57	1	1,303	1,058
W. Australia ..	1,956	3,733	243	13	7	14	7	10	4	2	3	3,772	2,220
Tasmania ..	152	323	81	1	..	..	..	..	2	1	..	325	235
Territories—													
Northern ..	460	912	21	3	..	..	..	9	1	2	..	926	482
Federal Capital	33	9	..	..	..	..	..	..	..	..	..	9	33
Total ..	11,406	28,087	5,371	155	195	98	87	2,355	427	117	13	30,812	17,499

The proportion of population of non-European race (exclusive of full-blood aborigines) in each State and Territory is shown in the following table, full-blood and half-caste non-Europeans being shown separately :—

POPULATION.—NON-EUROPEAN RACES, PROPORTIONS, CENSUS, 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

States and Territories.	Total Population.	Non-European Race.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1,000 of Total Population.	Number.	Number per 1,000 of Total Population.	Number.	Number per 1,000 of Total Population.
States—							
N.S. Wales ..	2,100,371	11,087	5.28	6,866	3.27	17,953	8.55
Victoria ..	1,531,280	4,281	2.79	1,791	1.17	6,072	3.97
Queensland ..	755,972	9,109	12.05	4,814	6.37	13,923	18.42
S. Australia ..	495,160	1,303	2.63	1,058	2.14	2,361	4.77
W. Australia ..	332,732	3,772	11.34	2,220	6.67	5,992	18.01
Tasmania ..	213,780	325	1.52	235	1.10	560	2.62
Territories—							
Northern ..	3,867	926	239.46	482	124.64	1,408	364.11
Fed. Capital	2,572	9	3.50	33	12.83	42	16.33
Total ..	5,435,734	30,812	5.67	17,499	3.22	48,311	8.89

(iv) *Biological and Sociological Significance.* The population of Australia is fundamentally British in race and nationality, and furnishes an example of the transplanting of a race into conditions greatly different from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the physical and moral constitution produced by the complete change of climatic and social environment. The new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present, the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably a distinct Australian type will not appear until three or four generations more have passed. Even then, it is probable that, with the great extent of territory and varying conditions presented there will be a number of types varying with locality. At present the Australian is little more than a transplanted Briton, with the essential characteristics of his British forbears, with perhaps some accentuation of the desire for freedom from restraint. The greater opportunity for an open-air life, and the absence of the restricting conventions of older countries, may be mainly responsible for this development.

(v) *Nationality.* Prior to the Census of 1921 no attempt had been made to ascertain the allegiance of the people, except in so far as a person was or was not a British subject. At the last Census all persons were asked to state their nationality, and the results which are given in the following table, show that of a total population of 5,435,734, as many as 5,386,693, or over 99 per cent., were definitely stated to be British subjects. Of the foreign element, the Chinese are the most numerous, representing 30 per cent. of the foreign people and 2.53 in every 1,000 of the total population.

**POPULATION.—NATIONALITY (ALLEGIANCE), AUSTRALIA, CENSUS,
4th APRIL, 1921.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

4th April, 1921.				4th April, 1921.			
Nationality.	Males.	Females.	Persons.	Nationality.	Males.	Females.	Persons.
British	2,722,141	2,664,552	5,386,693	Foreign— <i>continued.</i>			
Foreign—				Jugo-Slavian ..	502	109	611
Austrian ..	212	38	250	Norwegian ..	940	63	1,003
Belgian ..	171	104	275	Polish ..	353	157	510
Bulgarian ..	66	16	82	Russian ..	1,647	690	2,337
Chinese ..	13,486	273	13,759	Spanish ..	409	146	555
Czecho-Slovakian	120	26	146	Swedish ..	1,365	87	1,452
Danish ..	1,012	279	1,291	Swiss ..	421	154	575
Dutch ..	1,410	190	1,600	Turkish ..	79	37	116
Finnish ..	496	49	545	U.S. of America ..	2,528	803	3,331
French ..	1,252	910	2,162	Other ..	1,054	400	1,454
German ..	2,465	994	3,459				
Greek ..	2,357	413	2,770	Total Foreign..	38,753	7,072	45,825
Hungarian ..	31	9	40	Not stated ..	1,976	1,240	3,216
Italian ..	3,888	971	4,859				
Japanese ..	2,489	154	2,643	Grand Total ..	2,762,870	2,672,864	5,435,734

(vi) *Birthplaces.* The proportion of native-born in the Australian population has increased rapidly in recent years. At the Census of 1921 the Australian-born numbered 4,581,663 persons, or 84.51 per cent. of a total population of 5,421,242 persons whose birthplaces were specified. Of the remainder, 676,387, or 12.48 per cent., were natives of the British Isles, and 38,611, or 0.71 per cent., were natives of New Zealand, so that 97.70 of the total population at that time had been born either in Australasia or in the British Isles. Excluding these, the following countries are the most important recorded as the birthplaces of persons in Australia at the Census of 1921 :—

Germany, 22,396 (0.41 per cent.); China, 15,224 (0.28 per cent.); Scandinavia (comprising Sweden, Norway, and Denmark), 14,341 (0.26 per cent.); Italy, 8,135 (0.15 per cent.); British India, 6,918 (0.13 per cent.); United States of America, 6,604 (0.12 per cent.); Union of South Africa, 5,408 (0.10 per cent.); Canada, 3,550 (0.07 per cent.).

It may be noticed that among the States, the Australian-born element is lowest in Western Australia and Queensland, where the density of population is also least, but where the masculinity is greatest. On the other hand, in Tasmania, where the density is high and the masculinity is low, the proportion of Australian-born is highest. These related facts indicate that conditions throughout these territorially larger but less developed States hitherto have been, on the whole, less attractive to women and less conducive to the rearing of families than the conditions existing in the more settled States.

Information in greater detail respecting birthplaces will be found in the series of Census Bulletins which have been published in connexion with the Census of 1921.

POPULATION.—BIRTHPLACES AT CENSUS OF 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

Birthplace.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
MALES.									
Australia ..	880,892	646,023	303,654	215,630	126,794	98,102	1,654	1,250	2,273,999
New Zealand ..	9,913	5,460	1,827	630	1,445	672	36	19	20,002
British Isles ..	145,966	83,712	70,171	24,513	37,539	6,909	337	261	369,408
Other European Countries ..	15,212	9,765	13,137	4,674	5,746	679	132	12	49,357
Asia ..	9,586	4,246	6,237	1,273	3,939	475	607	13	26,376
Africa ..	1,500	999	426	249	313	94	7	2	3,590
America ..	3,388	1,800	1,181	486	647	173	27	5	7,707
Polynesia (a) ..	957	174	1,044	40	52	28	7	4	2,306
At Sea ..	675	524	321	187	115	46	3	1	1,872
Unspecified ..	3,412	2,021	971	585	688	565	11	..	8,253
Total ..	1,071,501	754,724	398,969	248,267	177,278	107,743	2,821	1,567	2,762,870
FEMALES.									
Australia ..	891,722	684,113	288,509	221,361	122,072	98,143	882	862	2,307,664
New Zealand ..	9,353	5,750	1,122	588	1,095	688	5	8	18,609
British Isles ..	114,460	77,405	58,063	21,813	29,200	5,841	73	124	306,979
Other European Countries ..	4,736	3,501	6,927	1,697	1,510	272	36	6	18,685
Asia ..	1,450	972	508	245	471	236	31	3	3,916
Africa ..	1,269	1,005	315	224	264	98	9	1	3,185
America ..	1,856	1,222	582	268	324	106	7	..	4,365
Polynesia (a) ..	925	180	174	42	33	30	1	1	1,386
At Sea ..	608	587	268	207	119	46	1	..	1,836
Unspecified ..	2,491	1,821	535	448	366	577	1	..	6,239
Total ..	1,028,870	776,556	357,003	246,893	155,454	106,037	1,046	1,005	2,672,864
PERSONS.									
Australia ..	1,772,614	1,330,136	592,163	436,991	248,866	196,245	2,536	2,112	4,581,663
New Zealand ..	19,266	11,210	2,949	1,218	2,540	1,360	41	27	38,611
British Isles ..	260,426	161,117	128,234	46,326	66,739	12,750	410	385	676,387
Other European Countries ..	19,948	13,266	20,064	6,371	7,256	951	168	18	68,042
Asia ..	11,036	5,218	6,745	1,518	4,410	711	638	16	30,292
Africa ..	2,769	2,004	741	473	577	192	16	3	6,775
America ..	5,244	3,022	1,763	754	971	279	34	5	12,072
Polynesia (a) ..	1,882	354	1,218	82	85	58	8	5	3,692
At Sea ..	1,283	1,111	589	394	234	92	4	1	3,708
Unspecified ..	5,903	3,842	1,506	1,033	1,054	1,142	12	..	14,492
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734

(a) Includes Norfolk Island, Papua, and the Territory of New Guinea.

POPULATION.—BIRTHPLACES AT CENSUS OF 1921—*continued*.

Birthplace.	States.						Territories.		Total.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fed. Cap.	
PERCENTAGE OF TOTAL POPULATION.									
	%	%	%	%	%	%	%	%	%
Australia ..	84.64	87.08	78.49	88.44	75.03	92.29	65.78	82.12	84.51
New Zealand ..	0.92	0.74	0.39	0.25	0.77	0.64	1.06	1.05	0.71
British Isles ..	12.43	10.55	17.00	9.37	20.12	6.00	10.64	14.97	12.48
Other European Countries ..	0.95	0.87	2.66	1.29	2.19	0.45	4.36	0.70	1.26
Asia ..	0.53	0.34	0.89	0.31	1.33	0.33	16.55	0.62	0.56
Africa ..	0.13	0.13	0.10	0.09	0.17	0.09	0.42	0.12	0.12
America ..	0.25	0.20	0.23	0.15	0.29	0.13	0.88	0.19	0.22
Polynesia (a) ..	0.09	0.02	0.16	0.02	0.03	0.03	0.21	0.19	0.07
At Sea ..	0.06	0.07	0.08	0.08	0.07	0.04	0.10	0.04	0.07
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) Includes Norfolk Island, Papua, and the Territory of New Guinea.

(vii) *Length of Residence of Immigrants.* At the Census of 1921 the population of Australia included 839,579 persons who were definitely shown to be immigrants, and the following table shows the number of years during which these people have resided in Australia. The number of persons whose length of residence is shown as less than one year is necessarily large, and it includes many persons, such as the crews of oversea ships, travellers, and others, who did not intend to remain in the country. The variations in the numbers with different periods of residence show the fluctuations in the volume of immigration. Thus the figures for length of residence groups 5–9 years and 10–14 years include those persons who arrived in Australia during the years 1911–1913 when immigration was large, those for the groups 30–44 years represent the arrivals during the boom period of the eighties of last century, while those for the groups 65–69 represent the survivors of the gold rush of the fifties.

POPULATION.—IMMIGRANT, LENGTH OF RESIDENCE IN AUSTRALIA, CENSUS, 4th APRIL, 1921.

Number of Completed Years of Residence.	Males.	Females.	Persons.	Number of Completed Years of Residence.	Males.	Females.	Persons.
0 ..	28,386	19,827	48,213	60–64 ..	10,372	11,671	22,043
1 ..	8,375	16,998	25,373	65–69 ..	11,378	13,594	24,972
2 ..	2,026	2,490	4,516	70–74 ..	2,875	3,669	6,544
3 ..	1,715	1,404	3,119	75–79 ..	716	935	1,651
4 ..	2,779	2,623	5,402	80–84 ..	519	693	1,212
5–9 ..	111,895	87,723	199,618	85–89 ..	78	124	202
10–14 ..	58,919	31,883	90,802	90–94 ..	16	15	31
15–19 ..	15,077	7,818	22,895	95 and upwards ..	1	—	1
20–24 ..	18,875	8,990	27,865	Not stated ..	13,903	12,050	25,953
25–29 ..	16,873	10,721	27,594				
30–34 ..	47,206	32,273	79,479	Total ..	480,618	358,961	839,579
35–39 ..	56,144	38,272	94,416	Born in Australia ..	2,273,999	2,307,664	4,581,663
40–44 ..	31,843	20,851	52,694	Birthplace not stated	8,253	6,239	14,492
45–49 ..	16,616	11,776	28,392				
50–54 ..	10,954	9,649	20,603	Total Population	2,762,870	2,672,864	5,435,734
55–59 ..	13,077	12,912	25,989				

A comparison of the above figures with the results of the Census of 1911 is given in Census Bulletin No. 18, and similar information relating to the individual States is given in the respective bulletins.

4. *Education.*—(i) *General.* The information concerning educational attainments which can be satisfactorily collected at a Census is necessarily meagre. In Australia the particulars ascertained have never amounted to more than a statement as to whether or not a person could read and write. The results, therefore, merely divide the population into three main groups, viz. :—(a) Those who cannot read ; (b) those who can read but cannot write ; and (c) those able to read and write. Of the 5,435,734 persons who

comprised the population of Australia on the 4th April, 1921, there were 805,794 who were definitely shown to be unable to read, and there were 86,642 persons whose ability in this direction was not stated. Thus, approximately 15 per cent. of the population were unable to read. Of the 805,794 persons returned as unable to read 600,206, or 74.5 per cent., were under five years of age, and many of the remaining 25.5 per cent. were also children. Allowing for those persons whose ability to read and write was unspecified, it may be said that over 95 per cent. of the population over five years of age can read and write. The number of persons returned at the Census of 1921 as able to read but unable to write was 14,512, of whom 962 could read a foreign language only. With the exception of New Zealand, there is probably no country in the world so strikingly unilingual as Australia.

POPULATION.—EDUCATION, CENSUS OF 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

States and Territories.	English Language.		Foreign Language only.		Cannot Read.		Un-specified	Total.
	Read and Write.	Read only.	Read and Write.	Read only.	Under age 5 years.	Age 5 years and over.		
MALES.								
STATES—								
New South Wales ..	875,514	2,676	3,595	218	121,529	51,302	16,667	1,071,501
Victoria ..	640,769	1,229	2,134	124	79,210	21,467	9,791	754,724
Queensland ..	325,382	1,289	3,512	162	46,174	16,810	5,640	398,969
South Australia ..	204,405	648	878	43	27,597	9,956	4,740	248,267
Western Australia ..	144,572	433	2,181	38	17,804	7,516	4,734	177,278
Tasmania ..	85,059	292	108	4	12,872	6,962	2,446	107,743
TERRITORIES—								
Northern ..	1,775	6	289	2	169	471	109	2,821
Federal Capital ..	1,292	5	7	..	167	89	7	1,567
Total ..	2,278,768	6,578	12,704	591	305,522	114,573	44,134	2,762,870

FEMALES.								
STATES—								
New South Wales ..	849,812	2,615	595	78	117,811	41,556	16,403	1,028,870
Victoria ..	668,565	1,609	424	106	76,426	18,504	10,922	776,556
Queensland ..	294,065	1,332	990	126	43,974	12,087	4,429	357,003
South Australia ..	206,672	828	312	40	26,305	8,090	4,646	246,893
Western Australia ..	128,507	310	304	19	17,173	5,708	3,433	155,454
Tasmania ..	85,684	274	12	1	12,674	4,834	2,558	106,037
TERRITORIES—								
Northern ..	559	1	36	1	162	182	105	1,046
Federal Capital ..	777	3	..	..	159	54	12	1,005
Total ..	2,234,641	6,972	2,673	371	294,684	91,015	42,508	2,672,864

PERSONS.								
STATES—								
New South Wales ..	1,725,326	5,291	4,190	296	239,340	92,858	33,070	2,100,371
Victoria ..	1,309,334	2,838	2,558	230	155,636	39,971	20,713	1,531,280
Queensland ..	619,447	2,621	4,502	288	90,148	28,897	10,069	755,972
South Australia ..	411,077	1,476	1,190	83	53,902	18,046	9,386	495,160
Western Australia ..	273,079	743	2,485	57	34,977	13,224	8,167	332,732
Tasmania ..	170,743	566	120	5	25,546	11,796	5,004	213,780
TERRITORIES—								
Northern ..	2,334	7	325	3	331	653	214	3,867
Federal Capital ..	2,069	8	7	..	326	143	19	2,572
Total ..	4,513,409	13,550	15,377	962	600,206	205,588	86,642	5,435,734

(ii) *Place of Education.* At the Census of 1921 the number of persons returned as receiving instruction was 1,107,690, or 20.4 per cent. of the total population, as compared with 17.4 per cent. in 1911. The place of instruction was given for 1,023,563 persons, and of these 74.92 per cent. were attending State schools, 18.93 per cent. were at private

schools, 2.44 per cent. at technical schools, 3 per cent. were receiving instruction at home, and 7 per thousand were attending universities. Of the males receiving instruction, 75.82 per cent. were at State schools, and 17.04 per cent. were at private schools; of the females 73.96 per cent. were at State schools and 20.90 per cent. at private schools.

POPULATION.—PLACE OF EDUCATION, CENSUS, 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

States and Territories.	Number being educated at—					Recorded as scholar but school not stated	Total.
	State School.	Private School.	Technical School.	Univer- sity.	At Home.		
MALES.							
STATES—							
New South Wales ..	150,561	35,199	6,512	2,122	6,081	17,101	217,576
Victoria ..	104,053	28,544	6,533	1,935	2,567	8,613	152,245
Queensland ..	60,168	10,269	1,517	187	2,953	4,931	80,025
South Australia ..	37,407	6,603	1,086	635	942	4,906	51,579
Western Australia ..	26,077	5,397	1,506	158	863	3,554	37,555
Tasmania ..	16,684	2,751	441	92	691	3,241	23,900
TERRITORIES—							
Northern ..	118	19	..	..	23	..	160
Federal Capital ..	200	18	273	..	21	..	512
Total ..	395,268	88,800	17,868	5,129	14,141	42,346	563,552
FEMALES.							
STATES—							
New South Wales ..	140,804	42,354	2,394	812	7,100	16,473	209,937
Victoria ..	99,572	31,244	1,564	728	3,205	9,003	145,316
Queensland ..	55,882	13,188	1,495	74	3,210	4,797	78,646
South Australia ..	34,990	7,779	513	355	1,100	4,918	49,655
Western Australia ..	24,279	6,902	1,079	109	1,069	3,443	36,881
Tasmania ..	15,775	3,453	71	45	849	3,140	23,333
TERRITORIES—							
Northern ..	121	39	..	..	27	3	190
Federal Capital ..	150	15	..	..	11	4	180
Total ..	371,573	104,974	7,116	2,123	16,571	41,781	544,138
PERSONS.							
STATES—							
New South Wales ..	291,365	77,553	8,906	2,934	13,181	33,574	427,513
Victoria ..	203,625	59,788	8,097	2,663	5,772	17,616	297,561
Queensland ..	116,050	23,457	3,012	261	6,163	9,728	158,671
South Australia ..	72,397	14,382	1,599	990	2,042	9,824	101,234
Western Australia ..	50,356	12,299	2,585	267	1,932	6,997	74,436
Tasmania ..	32,459	6,204	512	137	1,540	6,381	47,233
TERRITORIES—							
Northern ..	239	58	..	..	50	3	350
Federal Capital ..	350	33	273	..	32	4	692
Total ..	766,841	193,774	24,984	7,252	30,712	84,127	1,107,690

5. Religions.—At the Census of the 4th April, 1921, of a total population of 5,435,734, the number who objected to state their religion was 46,268; a further number of 45,990 failed to specify their religion in any degree; 20,544 stated that they had no religion; and 19,886 classed themselves in indefinite groups, such as "Freethinker," "Agnostic," "No Denomination," etc. Of those remaining (5,303,046), 5,267,641, or 99.33 per cent., were definitely stated to be Christians, and 35,405 were stated to be Non-Christians. The number who were definitely stated to be Christians represented nearly 97 per cent. of the total population. Of the total Christians, 2,372,830, or 45.04 per cent., belonged to the Church of England; 1,134,002, or 21.53 per cent., to the Roman Catholic Church; 636,974, or 12.09 per cent., to the Presbyterian Church; and 632,621, or 12.01 per cent., were Methodists. Thus the four denominations named embraced over 90 per cent. of the

declared Christians. It is possible that the number given above for Roman Catholics may be somewhat understated, as some of those shown in the table as "Catholics undefined" were doubtless Roman Catholics.

A comparative statement showing the religions of the people of the various States, as ascertained from the Censuses of 1911 and 1921, may be found in the bulletins published in connexion with the Census of 1921.

POPULATION OF AUSTRALIA, CENSUSES OF 1901, 1911, AND 1921,
ACCORDING TO RELIGION AND SEX.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

RELIGION.	MALES.			FEMALES.			PERSONS.		
	Census of 31st March, 1901.	Census of 3rd April, 1911.	Census of 4th April, 1921.	Census of 31st March, 1901.	Census of 3rd April, 1911.	Census of 4th April, 1921.	Census of 31st March, 1901.	Census of 3rd April, 1911.	Census of 4th April, 1921.
I. CHRISTIAN—									
Baptist ..	42,662	45,661	49,194	46,676	51,413	56,509	89,338	97,074	105,703
Catholic, Roman ..	433,504	465,803	565,029	417,116	455,622	568,973	850,620	921,425	1,134,002
Catholic, Greek ..	1,075	2,172	3,938	239	474	1,434	1,314	2,646	5,372
Catholic, Undefined ..	2,748	38,772	20,082	2,431	36,607	18,577	5,179	75,379	38,659
Church of Christ ..	11,265	17,382	24,680	12,927	21,366	29,894	24,192	38,748	54,574
Church of England ..	783,413	884,634	1,212,646	714,163	825,809	1,160,184	1,497,576	1,710,443	2,372,830
Congregational									
Independent	35,603	35,367	34,931	37,958	38,679	39,582	73,561	74,046	74,513
Lutheran ..	43,329	40,993	31,627	31,692	31,402	25,892	75,021	72,395	57,519
Methodist ..	251,611	269,641	306,785	252,490	278,165	325,836	504,101	547,806	632,621
Presbyterian ..	221,601	289,591	322,072	204,504	268,745	314,902	426,105	558,336	636,974
Protestant, Undefined	11,485	63,079	37,309	9,073	46,782	29,803	20,558	109,861	67,112
Salvation Army ..	14,802	12,322	14,584	16,298	14,343	17,005	31,100	26,665	31,589
Seventh Day Adventist	1,411	2,536	4,640	1,921	3,559	6,665	3,332	6,095	11,305
Unitarian ..	1,620	1,307	1,012	1,009	868	702	2,629	2,175	1,714
Others ..	10,944	15,796	21,115	10,879	15,524	22,039	21,823	31,320	43,154
Total, Christian	1,867,073	2,185,056	2,649,644	1,759,376	2,089,358	2,617,997	3,626,449	4,274,414	5,267,641
II. NON-CHRISTIAN—									
Hebrew ..	8,137	9,165	11,392	7,102	8,122	10,223	15,239	17,287	21,615
Buddhist ..		3,110	1,945		159	120		3,269	2,065
Chinese ..		3,243	3,512		40	79		3,283	3,591
Confucian	34,712	5,036	2,536	954	158	156	35,666	5,194	2,692
Mohammedan		3,706	2,647		202	221		3,908	2,868
Pagan ..		1,422	426		25	31		1,447	457
Others, Non-Christian	1,784	1,952	1,470	682	445	647	2,466	2,397	2,117
Total, Non-Christian	44,633	27,634	23,928	8,738	9,151	11,477	53,371	36,785	35,405
III. INDEFINITE—									
Freethinker ..	7,863	2,753	2,938	1,319	501	687	9,182	3,254	3,625
Agnostic ..	834	2,546	2,583	137	538	651	971	3,084	3,234
No Denomination ..	13,620	1,568	1,778	6,137	1,120	1,592	19,757	2,688	3,370
Others ..	638	3,531	5,797	463	2,116	3,860	1,101	5,647	9,657
Total ..	22,955	10,398	13,096	8,056	4,275	6,790	31,011	14,673	19,886
IV. NO RELIGION—									
Atheist ..	245	516	1,014	29	63	186	274	579	1,200
Others ..	5,168	7,723	15,008	1,337	1,714	4,336	6,505	9,437	19,344
Total ..	5,413	8,239	16,022	1,366	1,777	4,522	6,779	10,016	20,544
V. OBJECT TO STATE ..	28,443	55,766	29,952	13,688	27,237	16,316	42,131	83,003	46,268
VI. UNSPECIFIED ..	9,411	25,942	30,228	4,649	10,172	15,762	14,060	36,114	45,990
GRAND TOTAL ..	1,977,928	2,313,035	2,762,870	1,795,873	2,141,970	2,672,864	3,773,801	4,455,005	5,435,734

6. Conjugal Condition.—The number of persons whose conjugal condition was definitely stated at the Census of 4th April, 1921, was 5,421,191, of whom 2,753,740 were males and 2,667,451 were females. Of the 5,421,191 persons referred to, 1,998,582, or 36.86 per cent., were married, as compared with 33 per cent. in 1911; 237,821, or 4.39 per cent., were widowed; 8,528, or 0.15 per cent., were divorced; and 3,176,260, or 58.60 per cent., had never married. Of those who had never married, 1,725,004, or 54.31 per cent., were under 15 years of age. The proportion of married persons per cent. to the total population of the several States varied in the following order:—South Australia, 38.14; New South Wales, 37.40; Western Australia, 36.85; Victoria, 36.63; Tasmania, 35.88; Queensland, 35.20. On the basis of the adult population, the percentage of married persons in Australia was about 63.36, and in each State was approximately as follows:—Tasmania, 65.66; South Australia, 65.31; New South Wales, 64.78; Western Australia, 64.16; Queensland, 62.63; Victoria, 60.99. A comparison of the results given in the following table with those from the Census of 1911 will be found in the bulletins published in connexion with the Census of 1921.

POPULATION.—CONJUGAL CONDITION, CENSUS, 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

Conjugal Condition.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
MALES.									
Never married—									
Under age 15 ..	343,979	231,086	128,043	79,544	54,446	37,142	400	458	875,098
Age 15 and over	302,574	222,177	124,692	66,880	54,346	29,085	1,545	551	801,850
Total never married	646,553	453,263	252,735	146,424	108,792	66,227	1,945	1,009	1,676,948
Married ..	391,844	277,183	134,596	94,263	61,899	38,203	704	529	999,221
Widowed ..	27,851	21,279	10,001	6,657	4,528	2,909	88	28	73,341
Divorced ..	2,214	1,092	301	220	316	81	5	1	4,230
Unspecified ..	3,039	1,907	1,336	703	1,743	323	79	..	9,130
Total ..	1,071,501	754,724	398,969	248,267	177,278	107,743	2,821	1,567	2,762,870
FEMALES.									
Never married—									
Under age 15 ..	334,385	224,850	123,543	77,092	52,948	36,302	404	382	849,906
Age 15 and over	237,693	211,833	82,020	59,421	32,895	25,212	164	168	649,406
Total never married	572,078	436,683	205,563	136,513	85,843	61,514	568	550	1,499,312
Married ..	391,886	282,494	131,631	94,535	59,736	38,279	372	428	999,361
Widowed ..	60,701	54,928	19,039	15,262	8,526	5,965	33	26	164,480
Divorced ..	2,395	1,221	187	164	294	37	..	..	4,298
Unspecified ..	1,810	1,230	583	419	1,055	242	73	1	5,413
Total ..	1,028,870	776,556	357,003	246,893	155,454	106,037	1,046	1,005	2,672,864
PERSONS.									
Never married—									
Under age 15 ..	678,364	455,936	251,586	156,636	107,394	73,444	804	840	1,725,004
Age 15 and over	540,267	434,010	206,712	126,301	87,241	54,297	1,709	719	1,451,256
Total never married	1,218,631	889,946	458,298	282,937	194,635	127,741	2,513	1,559	3,176,260
Married ..	783,730	559,677	266,227	188,798	121,635	76,482	1,076	957	1,998,582
Widowed ..	88,552	76,207	29,040	21,919	13,054	8,874	121	54	237,821
Divorced ..	4,609	2,313	488	384	610	118	5	1	8,528
Unspecified ..	4,849	3,137	1,919	1,122	2,798	565	152	1	14,543
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734

7. **Occupations.**—(i) *General.* The following table shows, for each State and Territory and for Australia as a whole, the population—males and females separately—grouped according to the various classes of occupations. The bulletins which have been published in connexion with the Census of 1921 give, in greater detail than is possible here, the occupations of the people of each State and Australia, and also give comparisons of the results of the Censuses of 1911 and 1921.

(ii) *Breadwinners.* Assuming an equal distribution between breadwinners and dependents of those persons whose occupations were not specified, there were at the Census of 1921, 2,327,075 breadwinners, representing 42.8 per cent. of the total population. At the Census of 1911, the breadwinners represented 44.5 per cent. of the population. Of the total male population, 67.6 per cent. were breadwinners in 1921, as compared with 68.9 per cent in 1911. Of the female population the percentage of breadwinners was 17.4 in 1921, and 18.5 in 1911. The proportion of females to the total of breadwinners was almost identical at both periods, being slightly over 20 per cent.

(iii) *Industrial.* The decade 1911–1921 marks an interesting phase in the industrial development of Australia, inasmuch as, during that period, the persons engaged in manufacturing and other secondary processes became more numerous than those engaged in primary production. In 1911, the Industrial Class already had first place in New South Wales, Victoria, and South Australia, but in the other States the predominance of the Primary Class was such that, for Australia as a whole, the Primary Class was the greater. In 1921, the preponderance of the Industrial Class in New South Wales, Victoria, and South Australia had increased to such an extent and at the same time the excess in favour of the primary industries, though still existent in Queensland, South Australia, and Tasmania, had so diminished that the number of persons engaged in industrial occupations throughout Australia exceeded those in the primary industries by 124,922, or by nearly 21 per cent. In 1911 the primary industries employed 23,811 persons, or 4.2 per cent., more than were employed in the industrial group. Of the total of 2,316,589 breadwinners recorded in 1921, 723,526, or 31.2 per cent., belonged to the Industrial Class, as compared with 562,337, or 28.7 per cent., of all breadwinners in 1911. The principal group within the Industrial Class is composed of the manufacturing industries. During the intercensal period, the number of persons engaged in manufacturing industries increased from 363,805, or 18.5 per cent., of all breadwinners in 1911 to 441,277, or 19 per cent., of breadwinners in 1921, an increase of 77,472, or 21.3 per cent.

(iv) *Primary Producers.* As mentioned in the preceding paragraph, the primary producers have ceased to be the most numerous of the occupational classes. In 1911 the primary producers numbered 586,148, or 29.9 per cent., of all breadwinners, and although the numbers increased to 598,604, this greater number represented only 25.8 per cent. of the breadwinners in 1921. The number of persons engaged in Agriculture increased by 18.5 per cent., which was sufficient to increase slightly the proportion which the agricultural workers bore to the total breadwinners in 1911. The number engaged in the Pastoral Industries declined from 151,861 to 142,080, or by 6.4 per cent. The number engaged in Mining was less in 1921 by 39,043, or 36.9 per cent., having fallen to 66,761 from 105,804 in 1911.

Those engaged in Forestry and in connexion with Water Supply, though still relatively few, increased substantially—the former by 24 per cent., and the latter by 53.5 per cent.

(v) *Commercial.* The number of persons engaged in commercial pursuits in Australia, as a whole, increased by 23.8 per cent. during the intercensal decade, the increases in the various States ranging from about 18 per cent. in Victoria and Tasmania to 30.5 per cent. in New South Wales. This class represented 15.3 per cent. of all breadwinners in Australia in 1921, as against 14.6 per cent. in 1911. The similar proportions in the various States in 1921 were:—New South Wales, 15.7 per cent.; Victoria, 16.1 per cent.; Queensland, 13.3 per cent.; South Australia, 16 per cent.; Western Australia, 14.9 per cent.; and Tasmania, 12.2 per cent.

(vi) *Domestic.* Notwithstanding an increase in the number in the Domestic Class from 201,366 in 1911 to 209,971 in 1921, the class relatively to the total breadwinners has fallen from 10.3 per cent. in 1911 to 9.1 per cent. in 1921. For Australia, as a whole,

the number in the Domestic Class increased by 8,605, of whom 6,868 were females. The number in this class was actually less in 1921 in Victoria by 6.4 per cent., and in Tasmania by 7.2 per cent. than in 1911, while in the other States the increases vary from 3.1 per cent. in Western Australia to 12.5 per cent. in South Australia.

(vii) *Transport and Communication.* The number of persons employed in connexion with transport and communication increased from 157,391, or 8 per cent., of all breadwinners in 1911, to 207,737, or 9 per cent. in 1921.

(viii) *Professional.* The Professional Class embraces all persons, not otherwise classed, who are mainly engaged in government and defence, and in ministering to the moral, intellectual, and social wants of the community. The number of persons in this class increased from 144,611 in 1911 to 201,319 in 1921, or by 39.2 per cent. The Professional Class represented 8.7 per cent. of all breadwinners in 1921, as compared with 7.4 per cent. in 1911.

POPULATION.—OCCUPATIONS, CENSUS OF 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

Occupation.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
MALES.									
Class									
I. Professional ..	48,543	36,087	15,034	9,108	8,076	3,990	118	527	121,483
II. Domestic ..	20,786	13,640	6,297	3,853	3,870	1,411	106	9	49,972
III. Commercial ..	107,474	83,760	33,617	25,671	16,811	7,782	180	30	275,325
IV. Transport and Communication ..	81,826	51,266	28,620	18,896	13,898	5,715	261	41	200,523
V. Industrial ..	243,862	181,302	74,841	55,539	28,287	20,174	436	202	604,643
VI. Primary Pro- ducers ..	205,557	144,080	107,529	51,547	48,522	29,415	1,255	314	588,219
VII. Independent	5,121	4,239	1,364	827	537	575	1	..	12,664
Total Breadwinners	713,169	514,374	267,302	165,441	120,001	69,062	2,357	1,123	1,852,829
VIII. Dependents ..	349,789	235,298	129,123	80,647	55,480	37,620	378	440	888,775
Unspecified ..	8,543	5,052	2,544	2,179	1,797	1,061	86	4	21,266
Total ..	1,071,501	754,724	398,969	248,267	177,278	107,743	2,821	1,567	2,762,870

FEMALES.

Class									
I. Professional	29,233	24,498	11,006	6,756	5,328	2,953	33	29	79,836
II. Domestic	60,904	44,585	22,487	15,797	10,169	5,889	106	62	159,999
III. Commercial ..	31,270	24,251	9,475	7,240	4,973	2,465	4	6	79,684
IV. Transport and Communication ..	2,693	2,066	1,170	597	324	361	2	1	7,214
V. Industrial ..	40,806	52,943	10,532	7,975	4,239	2,376	9	3	118,883
VI. Primary Pro- ducers ..	3,153	3,358	2,020	946	457	448	2	1	10,385
VII. Independent	2,876	3,378	639	376	269	221	..	..	7,759
Total Breadwinners	170,935	155,079	57,329	39,687	25,759	14,713	156	102	463,760
VIII. Dependents ..	856,463	621,081	299,338	207,101	128,910	91,227	853	903	2,205,876
Unspecified ..	1,472	396	336	105	785	97	37	..	3,228
Total ..	1,028,870	776,556	357,003	246,893	155,454	106,037	1,046	1,005	2,672,864

POPULATION.—OCCUPATIONS, CENSUS OF 4TH APRIL, 1921—*continued.*

Occupations.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
PERSONS.									
Class									
I. Professional	77,776	60,585	26,040	15,864	13,404	6,943	151	556	201,319
II. Domestic ..	81,690	58,225	28,784	19,650	14,039	7,300	212	71	209,971
III. Commercial	138,744	108,011	43,092	32,911	21,784	10,247	184	36	355,009
IV. Transport and Communica- tion ..	84,519	53,332	29,790	19,493	14,222	6,076	263	42	207,737
V. Industrial ..	284,668	234,245	85,373	63,514	32,526	22,550	445	205	723,526
VI. Primary Pro- ducers ..	208,710	147,438	109,549	52,493	48,979	29,863	1,257	315	598,604
VII. Independent	7,997	7,617	2,003	1,203	806	796	1	..	20,423
Total Breadwinners	884,104	669,453	324,631	205,128	145,760	83,775	2,513	1,225	2,316,589
VIII. Dependents ..	1,206,252	856,379	428,461	287,748	184,390	128,847	1,231	1,343	3,094,651
Unspecified ..	10,015	5,448	2,880	2,284	2,582	1,158	123	4	24,494
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734

8. **Grade of Employment.**—(i) *General.* The term “grade of employment” indicates the capacity in which persons are employed in the various branches of industry. The grades recorded are five in number, viz.:—(a) Employer, (b) Working on own account, (c) Assisting but not receiving wages or salary, (d) Receiving wages or salary, (e) Unemployed. In addition to these categories provision is made for (f) Grade not applicable—which consists mainly of dependents and persons of independent means not engaged in gainful occupations, and (g) Grade not stated.

The results given in the following table have already been published in the Census bulletins, where they were shown in comparison with the results from the Census of 1911.

(ii) *Employers and Workers on Own Account.*—A marked feature of the comparison was the decline in the number of employers, and the increase in the number of those working on their own account. These changes were common to all the States. For Australia, as a whole, the number of employers fell from 212,583 in 1911 to 139,663 in 1921, or by 34.3 per cent., while the number working on their own account increased by nearly 93 per cent. from 177,114 in 1911 to 342,439 in 1921. From these results it would appear that many of the small employers of 1911 had dispensed with paid assistance in 1921. It is probable, also, that the establishment of returned soldiers in small businesses and other ventures increased the number of workers on their own account.

(iii) *Assisting but not Receiving Wages.*—The number of those assisting but not receiving wages or salary—mainly sons, daughters, or other relatives of the principal—fell by 54 per cent., from 76,370 in 1911 to 35,158 in 1921.

(iv) *Wage Earners.*—In considering the extent of the wage and salary-earning portion of the community, account must be taken of the persons returned as unemployed at the date of the Census, since, ordinarily, these persons are wage or salary earners. Combining the two grades, therefore, it appears that of the total population of Australia on the 4th April, 1921, the wage and salary earners represented 31 per cent. Excluding those persons to whom grade of employment is not applicable and those whose grade was not stated, it may be said that 74 per cent. of male breadwinners and 86 per cent. of the female breadwinners were wage or salary earners.

(v) *Unemployed.*—The number returned as unemployed in 1921 was nearly three times as great as in 1911, and it is of interest to note that these results are substantially confirmed by figures collected periodically by the Labour and Industrial Branch of this Bureau.

POPULATION.—GRADE OF EMPLOYMENT, AUSTRALIA, CENSUS OF 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

Grade.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
MALES.									
Employer ..	44,706	40,636	18,150	12,625	8,539	4,358	98	35	129,147
Working on own account ..	104,485	82,436	48,423	27,206	19,984	13,049	573	138	296,294
Assisting but not receiving wages or salary ..	9,712	10,742	5,158	2,721	1,413	1,862	10	5	31,623
Receiving wages or salary ..	456,068	315,391	151,301	104,858	76,633	42,077	1,281	733	1,148,342
Unemployed ..	54,092	32,432	30,392	9,232	7,671	3,554	342	24	137,739
Grade not applicable	391,522	266,661	142,786	89,606	61,013	41,605	444	629	994,266
Grade not stated ..	10,916	6,426	2,759	2,019	2,025	1,238	73	3	25,459
Total ..	1,071,501	754,724	398,969	248,267	177,278	107,743	2,821	1,567	2,762,870

FEMALES.

Employer ..	3,225	4,071	1,420	790	661	347	..	2	10,516
Working on own account ..	17,378	14,624	5,318	4,288	2,934	1,588	13	2	46,145
Assisting but not receiving wages or salary ..	1,608	1,003	571	201	85	67	..	..	3,535
Receiving wages or salary ..	130,619	118,052	44,305	31,312	19,146	11,440	133	96	355,103
Unemployed ..	7,651	7,581	2,956	1,348	1,400	509	3	1	21,449
Grade not applicable	865,428	629,013	301,818	208,432	130,272	91,887	864	904	2,228,618
Grade not stated ..	2,961	2,212	615	522	956	199	33	..	7,498
Total ..	1,028,870	776,556	357,003	246,893	155,454	106,037	1,046	1,005	2,672,864

PERSONS.

Employer ..	47,931	44,707	19,570	13,415	9,200	4,705	98	37	139,663
Working on own account ..	121,863	97,060	53,741	31,494	22,918	14,637	586	140	342,439
Assisting but not receiving wages or salary ..	11,320	11,745	5,729	2,922	1,498	1,929	10	5	35,158
Receiving wages or salary ..	586,687	433,443	195,606	136,170	95,779	53,517	1,414	829	1,503,445
Unemployed ..	61,743	40,013	33,348	10,580	9,071	4,063	345	25	159,188
Grade not applicable	1,256,950	895,674	444,604	298,038	191,285	133,492	1,308	1,533	3,222,884
Grade not stated ..	13,877	8,638	3,374	2,541	2,981	1,437	106	3	32,957
Total ..	2,100,371	1,531,280	755,972	495,160	332,732	213,780	3,867	2,572	5,435,734

9. Unemployment.—(i) *Causes.* In the preceding table it was shown that at the Census of the 4th April, 1921, there were in Australia 1,662,633 wage or salary earners, of whom 159,188 were unemployed. The following table gives the causes of unemployment so far as they were ascertained. Of the 159,188 returned as unemployed, 7,524, or 4.7 per cent., failed to state the cause. For the remainder, approximately 50 per cent. of the unemployment was due to scarcity of work, 29 per cent. to illness or accident, 3 per cent. to industrial disputes, 1.5 per cent. to old age, and 17 per cent. to other causes.

**POPULATION.—CAUSES OF UNEMPLOYMENT, AUSTRALIA, CENSUS OF
4th APRIL, 1921.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

Particulars.	Scarcity of Em- ployment.	Illness.	Accident.	Industrial Dispute.	Old Age.	Other Cause.	Cause not Stated.	Total.
Males ..	68,751	29,799	4,556	4,249	2,068	22,001	6,315	137,739
Females ..	6,092	9,551	246	290	71	3,990	1,209	21,449
Persons ..	74,843	39,350	4,802	4,539	2,139	25,991	7,524	159,188

(ii) *Duration.* At the Census of 1921 persons who were unemployed on Saturday, 2nd April, 1921, were asked to state the number of working days during which they had been out of work, but 24,256, or 15.2 per cent., of those concerned failed to comply with the request. The results of the inquiry are summarized in the following table. Of the 134,932 cases for which the duration was stated, approximately 46 per cent. were unemployed under five weeks, 17.2 per cent. from five to ten weeks, 10.6 per cent. from ten to fifteen weeks, and 26.2 per cent. above fifteen weeks :—

**POPULATION.—DURATION OF UNEMPLOYMENT, AUSTRALIA, CENSUS OF
4th APRIL, 1921.**

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

Duration of Unemployment in Working Days.	4th April, 1921.			Duration of Unemployment in Working Days.	4th April, 1921.		
	Males.	Females.	Persons.		Males.	Females.	Persons.
Under 10 ..	22,029	3,419	25,448	70-79 ..	4,181	673	4,854
10-19 ..	18,910	2,870	21,780	80-89 ..	2,410	341	2,751
20-29 ..	12,787	1,983	14,770	90 and over	30,896	4,513	35,409
30-39 ..	10,173	1,591	11,764	Not stated ..	20,735	3,521	24,256
40-49 ..	6,103	997	7,100				
50-59 ..	3,759	624	4,383				
60-69 ..	5,756	917	6,673	Total ..	137,739	21,449	159,188

(iii) *Unemployment in States.* Particulars regarding unemployment in the separate States at the time of the Census may be found in the bulletins relating to the Census of 1921.

§ 9. Dwellings.

[NOTE.—Information concerning dwellings will be found in detail in Census Bulletins, Nos. 19 to 25.]

1. *General.*—The following table presents a summary for the States and Territories and for the whole of Australia of the results relating to dwellings which were obtained from the Census of 1921. With those in course of construction on the 4th April, 1921, there were in Australia 1,210,790 dwellings—including hotels, boarding-houses, hospitals, gaols and any structure for the purpose of shelter as a dwelling, but excluding wagons used as camps, and dwellings occupied solely by full-blood aborigines. The number of dwellings per square mile varies from one dwelling to every 433 square miles in the Northern Territory to 1.87 dwellings per square mile (approximately one dwelling to every half a square mile) in Tasmania, the average throughout Australia being 0.41 dwellings to the square mile. Of the total dwellings referred to above, 51,166 were

unoccupied. This, however, does not necessarily imply that all dwellings so described were "to let" but, merely, that they had no inmates on the night of the Census. The average number of rooms per occupied dwelling ranged among the States from 5.33 in Victoria to 4.59 in Western Australia, the average for Australia being 4.96 as compared with 5.18 in 1911. The number of persons per occupied dwelling varied from 4.85 in New South Wales to 4.52 in Western Australia, the average for Australia being 4.71, as compared with 4.82 in 1911. From the foregoing it may be deduced that throughout Australia there were 0.95 persons per room in 1921, as against 0.93 persons in 1911.

2. **Occupied Private Dwellings.**—It is considered that a better index to the housing conditions of the people is obtained by excluding all other than occupied *private* dwellings. The following table shows that of the 1,153,285 occupied dwellings in Australia, 1,107,010 were private dwellings. These private dwellings contained an average of 4.94 rooms in 1921, as compared with 4.93 in 1911, and had an average of 4.40 inmates, as against 4.53 in 1911. It would appear, therefore, that approximately the number of inmates per room in occupied private dwellings throughout Australia has fallen from 0.92 in 1911 to 0.89 in 1921.

3. **Private Dwellings occupied by Tenants.**—The proportion of private dwellings which were occupied by tenants throughout Australia has fallen from 47.78 per cent. in 1911 to 43.67 in 1921. This fact is due mainly to the increase in the number of dwellings occupied by rent purchasers, which has been brought about by the policies of the State Governments of advancing moneys for the building of homes, and by the activities of the War Service Homes Commissioners.

DWELLINGS.—AUSTRALIA, CENSUS, 4th APRIL, 1921.

(EXCLUSIVE OF DWELLINGS OCCUPIED SOLELY BY FULL-BLOOD ABORIGINALS.)

(Subject to revision.)

Particulars of Dwellings.	States.						Territories.		Total.
	New South Wales.	Victoria.	Q'land.	South Aust.	West. Aust.	Tasmania.	North-ern.	Federal Cap.	
All Dwellings									
Occupied (a) ..	432,976	331,290	160,139	107,914	73,548	45,818	1,074	526	1,153,285
Unoccupied ..	18,619	14,994	6,747	4,431	3,274	2,934	138	29	51,166
Being Built ..	2,724	2,009	347	674	289	295	1	..	6,339
Total Dwellings ..	454,319	348,293	167,233	113,019	77,111	49,047	1,213	555	1,210,790
Number of Dwellings per square mile ..	1.47	3.96	0.25	0.30	0.08	1.87	.002	0.59	0.41
Rooms per Occupied Dwelling ..	5.23	5.33	5.31	5.09	4.59	4.70	2.80	5.29	4.96
Population per Occupied Dwelling ..	4.85	4.62	4.72	4.59	4.52	4.67	3.60	4.89	4.71
Occupied <i>Private</i> Dwellings ..	414,468	318,936	153,313	104,295	70,185	44,432	1,005	376	1,107,010
Rooms per Dwelling ..	4.97	5.11	4.94	4.90	4.22	4.80	2.70	4.85	4.94
Inmates per Dwelling ..	4.52	4.34	4.40	4.34	4.11	4.44	2.83	4.39	4.40
Inmates per Room ..	0.92	0.85	0.89	0.89	0.97	0.93	1.05	0.91	0.89
Percentage occupied by Tenants ..	49.72	42.46	33.59	40.67	36.95	47.30	25.31	65.18	43.67
Weekly Rental Value (b)	18s. 2d.	16s. 11d.	17s. 3d.	14s. 7d.	14s. 2d.	12s. 0d.	14s. 4d.	9s. 2d.	16s. 7d.

(a) Excluding Wagons and Camps. occupied by tenants.

(b) Average weekly rental value of private dwellings.

4. **Private Dwellings in Urban and Rural Divisions.**—(i) *General.* The following table gives a comparison of the particulars relating to *occupied private dwellings* in the Urban and Rural Divisions of Australia. The table shows that, while the average number of rooms and the average number of inmates per occupied private dwelling are greater in the Metropolitan Area than in the Urban Provincial or Rural Districts, the average number of inmates per room is least in the Metropolitan Districts.

(ii) *Tenants.* The proportion of occupied private dwellings occupied by tenants is greatest in the Metropolitan Areas, where it represents 53.17 per cent. of all dwellings for which the mode of occupancy was stated, as against 46.05 per cent. in the Urban

Provincial Districts, and 31.02 per cent. in the Rural Districts. It may be pointed out, however, that there is, in most cases, an essential difference between the economic status of the dwelling in urban districts and in rural districts, inasmuch as in urban districts the dwelling is most frequently a purely residential entity, whereas in rural districts the productive property of the land—to which the dwelling is an appurtenance—is most often the incentive to ownership.

(iii) *Rental Value.* The fact relating to private dwellings which shows the greatest divergence between the Metropolitan and other divisions of the country is the weekly rental value, which varies from an average of 10s. 1d. in the Rural Districts to 20s. 8d. in the Metropolitan Areas.

OCCUPIED PRIVATE DWELLINGS.—URBAN AND RURAL, AUSTRALIA, CENSUS, 4th APRIL, 1921.

(Subject to revision.)

Particulars.	Urban.		Rural.	Total.
	Metropolitan.	Provincial.		
Occupied Private Dwellings	467,913	207,807	431,290	1,107,010
Rooms per dwelling	5.15	5.07	4.66	4.94
Inmates per dwelling	4.42	4.40	4.39	4.40
Inmates per room	0.86	0.87	0.94	0.89
Percentage occupied by tenants ..	53.17	46.05	31.02	43.67
Weekly rental value (a)	20s. 8d.	14s. 0d.	10s. 1d.	16s. 7d.

(a) Average weekly rental value of private dwellings occupied by tenants.

5. *Private Dwellings in Metropolitan Areas.*—(i) *General.* The following table gives a comparison of the results, ascertained by the Census of 1921, relating to private dwellings in the Metropolitan Areas of the various States. The number of rooms per dwelling varied from a minimum of 4.67 in Perth to a maximum of 5.47 in Brisbane—a difference of 17 per cent.; whereas the number of inmates per dwelling varied from 4.31 in Adelaide to 4.52 in Sydney—a difference of only 5 per cent. The average number of inmates per room was highest in Perth, with 95 persons to every hundred rooms, and lowest in Brisbane, where there were 81 persons to every hundred rooms.

(ii) *Tenants.* The proportion of private dwellings occupied by tenants in the various Metropolitan Areas ranged from 39.18 per cent. in Brisbane to 59.22 per cent. in Sydney, the average for the six capitals being 53.17 per cent., as against 63.48 per cent. in 1911. As already mentioned, the decline during the decade 1911–1921 in the proportion of tenants was due largely to the action of the State Governments and of the War Service Homes Commissioners in facilitating the acquirement of houses under the system of purchase by instalment.

(iii) *Rental Value.* The weekly rent of private dwellings occupied by tenants ranged from 17s. 3d. per week in Brisbane and Hobart to 23s. per week in Sydney.

OCCUPIED PRIVATE DWELLINGS IN METROPOLITAN AREAS.—CENSUS, 4th APRIL, 1921.

(Subject to revision.)

Particulars of Dwellings.	Sydney and Suburbs.	Melbourne and Suburbs.	Brisbane and Suburbs.	Adelaide and Suburbs.	Perth and Suburbs.	Hobart and Suburbs.	Total.
Occupied Private Dwellings ..	173,322	158,001	42,378	53,741	29,741	10,730	467,913
Rooms per Dwelling ..	5.14	5.19	5.47	5.06	4.67	5.10	5.15
Inmates per Dwelling ..	4.52	4.34	4.44	4.31	4.43	4.34	4.42
Inmates per room ..	0.88	0.84	0.81	0.85	0.95	0.85	0.86
Percentage occupied by Tenants	59.22	54.14	39.18	46.64	43.57	55.02	53.17
Weekly Rental Value (a) ..	23s. 0d.	20s. 0d.	17s. 3d.	17s. 7d.	17s. 9d.	17s. 3d.	20s. 8d.
Weekly Rental Value per Room	4s. 6d.	3s. 10d.	3s. 2d.	3s. 6d.	3s. 10d.	3s. 5d.	4s. 0d.

(a) Average weekly rental value of private dwellings occupied by tenants.

§ 10. Immigration.

(A) The Encouragement of Immigration into Australia.

1. **General.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, to promote the immigration of suitable settlers into Australia. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under section 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration, were formerly confined to advertising the resources and attractions of Australia by means of exhibitions, and in handbooks, newspapers, and periodicals. During the war immigration operations were almost entirely suspended.

2. **Joint Commonwealth and States' Immigration Scheme.**—In 1920 an arrangement was arrived at between the Commonwealth and State Governments under which the Commonwealth is responsible for the recruiting of immigrants abroad and for their transport to Australia; whilst the State Governments advise the Commonwealth as to the numbers and classes of immigrants which they are prepared to receive. Briefly stated, the Commonwealth selects the immigrant according to the requirements of the State concerned and brings him to Australia; and on his arrival the State Government assumes the responsibility for placing him in employment or upon the land. Incidentally, the Commonwealth undertakes all publicity and propaganda in connexion with the encouragement of immigration.

3. **Assisted and Nominated Passages.**—The British and Commonwealth Governments jointly donate £11 towards the passages of approved settlers for Australia from the United Kingdom. Further assistance is granted by way of loans in special cases. Under the joint scheme the immigrants entitled to part-paid fares are divided into two classes—"Selected" immigrants and "Nominated immigrants." "Selected" immigrants are those who are originally recruited by the Commonwealth overseas. "Nominated" immigrants are those nominated by persons resident in Australia, and the nominators, who must submit their applications through the officers in charge of the State Immigration Offices in the various capital cities, are held responsible for their nominees upon arrival, so that they shall not become a burden upon the State.

4. **Oversea Settlement Committee's Free Passage Scheme.**—Free passages under this scheme are no longer granted except to the wives and certain dependent children of British ex-service men. Such ex-service men, who have already come to Australia under the free passage scheme, may nominate their wives and children through the State Immigration Offices for free passages any time within two years of the departure of the nominators from the United Kingdom.

Intending settlers or immigrants may, on application, obtain full information from the Director of Migration and Settlement, Australia House, The Strand, London, W.C.2.; or from the Deputy Director, Commonwealth Immigration Offices, 65 Elizabeth-street, Melbourne.

5. **Results of Assisted Immigration.**—In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance ceased for the time being in Victoria in 1873, in South Australia in 1886, and in Tasmania in 1891. In New South Wales, general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales, might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, had to be paid in each case. Under the provisions of these regulations, immigrants to the number of 1,994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been granted. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. Assistance to immigrants, which in the case of Victoria had practically ceased in 1873, has recently been again afforded. In South Australia the principle of State assistance was again introduced in 1911, and in Tasmania in 1912.

The number of assisted immigrants for the years 1914 to 1922 and the total from the earliest times up to the end of 1922 are given in the following table :—

ASSISTED IMMIGRATION.—1914 TO 1922, AND UP TO THE END OF 1922.

State	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	Total.
No. Assisted during 1914	6,655	7,496	4,096	644	1,729	185	20,805
" " " 1915	1,695	1,724	1,599	79	635	64	5,796
" " " 1916	649	327	300	..	103	18	1,397
" " " 1917	239	146	91	..	26	2	504
" " " 1918	199	101	100	..	26	..	426
" " " 1919	67	139	39	..	..	..	245
" " " 1920	3,211	2,763	1,272	..	1,499	314	9,059
" " " 1921	4,980	3,987	1,147	572	3,381	615	14,682
" " " 1922	7,087	9,145	1,711	1,531	4,373	411	24,258
Total to end of 1922 ..	287,279	202,789	218,316	104,810	51,074	23,523	887,791

(B) The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i) *Alien Races.* For many years prior to federation the States had imposed certain restrictions upon the admission of persons desirous of becoming permanent residents. The influx of Chinese, for example, was limited by stringent statutes, and later, general Acts were passed in some of the States which restricted the immigration of other—principally Asiatic—races.

(ii) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to become an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i) *Constitutional.* Under Part V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 27 hereinbefore.)

(ii) *Legislation.* The powers above specified have been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the previously existing State laws. The present Commonwealth Acts dealing with Immigration are the Immigration Act 1901–1920 and the Contract Immigrants Act 1905. A summary of the provisions of these Acts (excepting the provisions of the Amending Immigration Act 1920, which are given below), containing particulars regarding the admission of immigrants, prohibited immigrants, the liabilities of shipmasters and others, and kindred matters will be found in preceding Year Books (see Year Book, No. 12, pp. 1166 to 1168).

3. **Amending Immigration Act 1920.**—The principal provisions of this Act, which came into operation as from the 2nd December, 1920, are those prohibiting the entry of (a) any person who advocates the overthrow by force or violence of the established Government of the Commonwealth or of any State or of any other civilized country, or of all forms of law, etc. ; (b) for a period of five years, any person of German, Austro-German, Bulgarian, or Hungarian parentage and nationality, or Turk of Ottoman race ; (c) any person over 16 years of age who, on demand by an officer, fails to prove that he is the holder of a valid passport ; (d) any person who has been deported under any Act.

Section 9 of the War Precautions Act Repeal Act also provides for prohibiting the entry of any British subject who upon being required to make and subscribe an oath or affirmation of loyalty fails to do so.

4. **Statistics.**—The statistics relative to immigration, which are presented in this Chapter, have been compiled by the Department of Home and Territories in accordance with the provisions of the Immigration Act 1901–20. The number of persons admitted without test includes Australian citizens who have been abroad, and other persons landing in Australia irrespective of the length of time which they propose to stay. Certain persons who are permitted to land (under security for their subsequent departure) pending transshipment to another country are not included. The majority of the persons of Asiatic or other non-European nationality shown in the table are former residents of Australia who have returned from visits abroad, or are persons who have been admitted temporarily under exemption certificates, for business, educational, or other purposes. The Immigration Act 1901–20 does not require any statistical record of the departures from Australia.

It may be mentioned, however, in this connexion, that the Bureau of Census and Statistics, for the purpose of estimating the population of Australia, compiles—from data collected by the Department of Trade and Customs—statistics of both arrivals into and departures from Australia. For this compilation, all persons leaving an overseas ship, and all persons joining an overseas ship, in any Australian port, are counted. Consequently the number of arrivals as recorded, respectively, under the Immigration Act and by this Bureau are not in complete agreement. During the last five years the number of persons who desired but were not permitted to land was 16 in 1918; 27 in 1919; 26 in 1920; 29 in 1921, and 18 in 1922.

The following table shows the number and nationality of persons admitted during the years 1918 to 1922 without passing the dictation test:—

PERSONS ADMITTED WITHOUT DICTATION TEST.—NATIONALITIES,
AUSTRALIA, 1918 TO 1922.

Nationality.	1918.	1919.	1920.	1921.	1922.
EUROPEANS—					
Austrians	(b)3	(b)22	3	(g)5	(g)8
Belgians	35	31	90	73	72
British	(c)71,765	(d)217,037	(e)95,879	76,518	84,263
Danes	110	124	189	201	179
Dutch	163	526	699	321	233
French	571	815	785	529	525
Germans	(b)36	(b)54	(f)115	(g)76	(g)86
Greeks	288	93	131	258	472
Italians	24	116	631	1,278	3,367
Maltese	14	47	88	132	373
Poles	3	2	27	51	45
Portuguese	8	9	9	8	2
Rumanians	9	6	10	9	14
Russians	199	142	121	100	116
Scandinavians	493	448	437	487	361
Spaniards	23	37	37	83	51
Swiss	39	30	90	149	169
Turks .. ..	..	(b)1	..	..	4
Other Europeans .. ..	..	106	197	344	(h)339
AMERICANS—					
North Americans	749	1,102	1,698	1,577	1,372
South Americans	12	8	16	35	14
American Indians .. ..	..	..	6	..	..
Negroes	2	5	5	6	5
West Indians	3	5	..	7	3

(b) Principally prisoners of war and their families. (c) Including 44,151 returned troops and nurses. (d) Including 163,756 troops and nurses. (e) Including 11,546 returned troops and nurses. (f) Landed for transshipment or under special authority. (g) Landed on exemption certificates or under special authority. (h) Including 110 Finns and 125 Jugo-Slavs.

PERSONS ADMITTED WITHOUT DICTATION TEST.—NATIONALITIES,
AUSTRALIA, 1918 TO 1922—*continued.*

Nationality.	1918.	1919.	1920.	1921.	1922.
ASIATICS—					
Arabs	1,723	1,495	1,753	1,833	1,964
Chinese	2	7	12	19	12
Cingalese	10	18	10	13	10
Filipinos	102	203	241	163	213
Hindoos	431	521	345	282	390
Japanese	21	27	12	6	8
Javanese	65	320	207	44	39
Malays	1	6	56	39	79
Syrians .. ..	..	..	282	34	371
Timorese .. ..	..	..	..	..	..
OTHER RACES—					
Maoris	1	..	1	..	..
Mauritians .. ..	..	..	5	..	..
Pacific Islanders	43	24	47	46	47
Papuans	133	135	30	170	368
Unspecified	(a)88	(a)214	85	44	39
Total	77,169	223,736	104,351	84,944	95,618

(a) A large percentage of these immigrants was Timorese.

The following table shows the number of persons of non-European races who left Australia during the years 1918 to 1922 :—

Nationality.	1918.	1919.	1920.	1921.	1922.
American Negroes	3	1	11	7	4
West Indians	1	3	10	2	2
Afghans	2	..	..	..	..
Arabs	1	5	5	4	6
Chinese	1,722	1,968	2,115	2,912	2,189
Cingalese	15	10	11	20	5
Filipinos	14	98	53	19	25
Hindoos	86	208	227	338	194
Japanese	774	526	554	626	359
Javanese	18	22	24	8	4
Malays	172	129	144	209	79
Pacific Islanders	20	23	51	43	46
Papuans	147	66	178	82	146
Others	46	105	128	330	154
Total	3,021	3,164	3,511	4,600	3,213

The following table shows the immigration into each of the Australian States from 1918 to 1922 :—

IMMIGRATION.—STATES, ETC., 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
1918 ..	37,375	31,114	1,474	1,958	5,043	..	205	77,169
1919 ..	96,331	84,751	6,007	16,897	18,507	1,163	80	223,736
1920 ..	69,135	19,302	4,151	4,877	6,803	1	82	104,351
1921 ..	54,578	15,883	4,269	3,143	7,029	6	36	84,944
1922 ..	54,205	22,340	5,948	4,043	9,062	..	20	95,618

(C) Passports.

Provision is made in the Immigration Act 1920 for the production of passports by all persons over 16 years of age who desire to enter Australia. Similarly, the Passports Act 1920 provides that no person over the age of 16 years shall leave Australia unless—

- (a) he is the holder of a passport or other document authorizing his departure ; and
- (b) his passport has been viséed or indorsed in the prescribed manner for that journey, and the visé or indorsement has not been cancelled.

Among the exceptions to this requirement are natural-born British subjects leaving for New Zealand, Papua, or Norfolk Island ; members of the crew of any vessel who sign on in Australia for an oversea voyage and who satisfy an authorized officer that they are by occupation seafaring men ; aboriginal natives of Asia, or of any island in the East Indies, or in the Indian or Pacific Oceans. The charge for a Commonwealth passport is 10s., and for a visé 2s.

§ 11. Naturalization.

1. **Commonwealth Legislation.**—A brief summary of the Commonwealth legislation regarding naturalization may be found in Year Book No. 15 (p. 1090).

The “Nationality Act 1920” was amended by the “Nationality Act 1922,” which extends the operation of the Principal Act to the Territories of Papua and Norfolk Island, and to any other territories under the authority of the Commonwealth to which the Governor-General by proclamation declares it to extend.

The grant of a certificate of naturalization entitles the recipient to all the rights and privileges, and renders him subject to all the obligations of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalized persons, such distinction shall hold good in the case of all persons naturalized under the Commonwealth Act.

The “Nationality Act 1920” provides that applications for certificates of naturalization must be made to the Governor-General, the qualifications required in an applicant being:—(i) Residence in Australia or a Territory, continuously for not less than one year immediately preceding his application for naturalization, and previous residence, either in Australia or in some other part of His Majesty’s dominions, for a period of four years within the last eight years before the application ; (ii) Good character and an adequate knowledge of the English language ; (iii) Intention to settle in the British Empire.

The applicant is required to furnish the following particulars in support of his application:—His own statutory declaration stating—(a) Name ; (b) Age ; (c) Birth-place ; (d) Occupation ; (e) Residence ; (f) Length of residence in the British Empire ; (g) Intention to settle in the British Empire ; (h) Such other particulars as are prescribed. He must also furnish—(a) Newspapers containing copies of an advertisement, as prescribed, of his intention to seek naturalization ; (b) Certificates of character from three natural-born British subjects, two of whom must be householders, and the third a Justice of the Peace, Postmaster, State School Teacher, or Police Officer ; (c) Satisfactory evidence that he has an adequate knowledge of the English language.

The Governor-General in Council may, in his absolute discretion, and with or without assigning any reason, grant or withhold a certificate of naturalization as he thinks most conducive to the public good ; but the issue of a certificate of naturalization will not be effected until the applicant furnishes a certificate signed by a Justice of the High Court of Australia, a State Judge, or a Magistrate, certifying that he has renounced allegiance to the country of which he was a subject at the time of his application for naturalization, and that he has taken an oath or affirmation of allegiance to the Crown in accordance with the Constitution. The grant of a certificate is made free of charge.

In addition to naturalization by grant of certificate, the Act makes provision for—
(a) Naturalization by marriage; (b) Naturalization by inclusion in certificate granted to parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of a person who is not a natural-born British subject, but who being under 21 years of age has, at the request of the parent, been included in the certificate granted to him by the Commonwealth. In each instance the person concerned is deemed to be naturalized under the Commonwealth Act.

The Governor-General may revoke a certificate of naturalization on any one of a number of grounds set out in Section 12 of the Nationality Act 1920–22, and the grantee thereupon ceases to be a British subject and is regarded as a subject of the State to which he belonged at the date of issue of the certificate of naturalization.

Where a wife and any minor children have acquired British nationality under the certificate issued to the husband and father, and such certificate is subsequently revoked, the wife and children remain British subjects unless the Governor-General otherwise declares, or unless they themselves elect to make a declaration of alienage.

In accordance with the Act, a list of persons naturalized, with their addresses, is published in the *Commonwealth Gazette* from time to time.

The administration of the Act is carried out by the Home and Territories Department, and the Governor-General is authorized to make such regulations as are necessary or convenient for giving effect to the Act.

2. **Statistics.**—Particulars regarding the nationalities of the recipients of certificates of naturalization issued under the Act during each of the five years 1918 to 1922 and the countries from which such recipients had come, are given in the following table:—

NATURALIZATION.—COMMONWEALTH CERTIFICATES GRANTED, 1918 TO 1922.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1918.	1919.	1920.	1921.	1922.		1918.	1919.	1920.	1921.	1922.
Italian ..	8	34	139	182	200	Great Britain ..	82	66	100	245	201
Swedish ..	38	32	37	48	47	Italy ..	9	29	128	179	188
Danish ..	52	50	55	57	53	Germany ..	13	13	59	342	293
Russian ..	30	20	18	126	139	America (North)	12	28	52	87	88
German ..	15	11	67	459	376	Sweden ..	12	8	20	22	15
Norwegian ..	36	17	24	38	38	Denmark ..	19	18	27	26	22
Greek ..	21	49	80	140	138	Norway ..	22	10	15	14	20
American (North)	..	11	22	29	23	Greece ..	13	35	43	82	106
Dutch ..	21	10	27	14	18	France ..	10	8	18	40	24
Swiss ..	12	14	29	16	22	Egypt ..	1	10	24	66	41
French ..	11	8	22	41	28	America (South)	5	..	..	..	..
Spanish ..	3	6	20	17	16	Holland ..	5	..	..	..	11
Belgian ..	5	4	5	5	4	Russia ..	4	..	..	56	73
Rumanian ..	2	1	2	7	7	South Africa ..	5	9	15	25	13
Portuguese ..	2	1	3	1	2	Belgium ..	7	6	16	31	32
American (South)	..	..	..	1	..	New Zealand ..	6	6	15	23	16
Austrian ..	1	2	2	29	20	Switzerland ..	3	6	11	10	9
Mexican ..	..	1	..	..	..	Spain ..	2	..	10	8	14
Chinese ..	..	1	..	2	..	New Caledonia ..	1	..	..	..	..
Serbian ..	4	..	2	2	3	Argentina ..	1	6	..	..	..
Syrian ..	..	1	..	96	64	Canada ..	2	..	..	..	..
Polish ..	..	6	17	52	45	Finland ..	..	..	..	..	4
Finnish ..	..	16	37	34	21	Other Countries	27	37	76	255	183
Others ..	..	..	21	115	89						
Total ..	261	295	629	1,511	1,353	Total ..	261	295	629	1,511	1,353

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalization during the years 1918 to 1922 were resident :—

NATURALIZATION.—COMMONWEALTH CERTIFICATES GRANTED IN EACH STATE, ETC., 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Total.
1918 ..	85	70	59	19	25	3	..	261
1919 ..	103	70	67	21	29	5	..	295
1920 ..	208	136	167	50	61	5	2	629
1921 ..	461	309	427	165	135	12	2	1,511
1922 ..	409	199	381	116	228	17	3	1,353

3. **Census Particulars.**—On the Personal Card used at the Census of 3rd April, 1911, an inquiry as to naturalization was made, all persons who were British subjects by naturalization being required to indicate the fact by inserting the letter N in the place provided for the purpose on the card. In addition, in checking the cards in the Census Bureau, instructions were given that cases of women naturalized by marriage to British subjects, and of children naturalized by residence, with parents who have become British subjects, should be duly taken into account by the insertion of the letter N if originally omitted. The results of the tabulation will be found in the following table :—

NATURALIZATION.—NATURALIZED BRITISH SUBJECTS, CENSUS OF 3rd APRIL, 1911.

Particulars.	States.						Territories.		Total.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed. Cap.	
Males ..	11,333	8,445	11,025	4,141	3,544	734	457	4	39,683
Females ..	2,808	2,182	5,562	1,763	646	293	13	1	13,268
Persons ..	14,141	10,627	16,587	5,904	4,190	1,027	470	5	52,951

Corresponding particulars from the Census of 1921 are not yet available.

§ 12. Population of Territories.

At the Census of the 4th April, 1921, special arrangements were made to obtain complete and uniform information concerning each of the five Territories of the Commonwealth, viz. :—(1) Northern Territory; (2) Federal Capital Territory; (3) Norfolk Island; (4) Papua; (5) Territory of New Guinea.

The work of Census enumeration in each Territory was carried out under the direction of the Commonwealth Supervisor of Census, the local organization in each Territory being under the control of a Deputy Supervisor of Census stationed in each Territory. On the conclusion of the collection the whole of the material was forwarded

to the Census Office, Melbourne, for tabulation in conjunction with the data for Australia. A summary of the population and number of dwellings in each Territory is shown in the following table :—

POPULATION AND DWELLINGS.—TERRITORIES, 4th APRIL, 1921.

(EXCLUSIVE OF FULL-BLOOD ABORIGINALS IN THE NORTHERN AND FEDERAL CAPITAL TERRITORIES AND OF THE INDIGENOUS POPULATION OF PAPUA AND NEW GUINEA).

Territory.	Population.			Dwellings.			Total.
	Males.	Females.	Persons.	Occu- pied.	Unoccu- pied.	Being Built.	
Northern Territory ..	2,821	1,046	3,867	1,075	138	1	1,214
Federal Capital Territory ..	1,567	1,005	2,572	527	28	..	555
Norfolk Island	339	378	717	168	22	3	193
Papua	1,408	670	2,078	(a) 672	43	4	719
Territory of New Guinea ..	2,502	671	3,173	1,056	18	..	1,074

(a) In addition, there were 15 cases in which Census night was passed in camps without ordinary dwellings.

CHAPTER XXV.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, 1918 to 1922.**—The total number of male and female births registered in Australia during the years 1918 to 1922 is shown in the two tables hereunder :—

MALE BIRTHS, 1918 TO 1922.

Year.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Cap. Ter.	Aus- tralia.
1918	.. ..	26,002	16,172	10,080	5,787	3,615	2,717	59	26	64,458
1919	.. ..	24,924	16,225	9,746	5,776	3,477	2,718	55	10	62,931
1920	.. ..	27,691	18,647	10,537	6,178	4,256	2,908	31	8	70,256
1921	.. ..	28,005	18,288	10,638	6,122	3,988	2,944	39	15	70,039
1922	{ Single births	27,650	18,318	10,081	6,027	4,074	2,942	38	17	69,147
	{ Twins ..	562	413	182	120	89	53	..	..	1,419
	{ Triplets ..	6	7	..	3	..	..	..	..	16
	{ Total births	28,218	18,738	10,263	6,150	4,163	2,995	38	17	70,582

FEMALE BIRTHS, 1918 TO 1922.

Year.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Cap. Ter.	Aus- tralia.
1918	.. ..	24,707	15,425	9,456	5,570	3,491	2,563	46	23	61,281
1919	.. ..	23,608	15,394	8,953	5,284	3,460	2,592	51	17	59,359
1920	.. ..	26,251	17,566	9,719	5,850	3,893	2,832	32	7	66,150
1921	.. ..	26,631	17,303	9,691	5,852	3,819	2,811	40	12	66,159
1922	{ Single births	26,385	17,156	9,533	5,725	3,859	2,762	32	13	65,465
	{ Twins ..	564	378	191	126	109	60	..	2	1,430
	{ Triplets ..	3	16	..	..	..	..	..	..	19
	{ Total births	26,952	17,550	9,724	5,851	3,968	2,822	32	15	66,914

2. **Total Births, 1918 to 1922.**—The total number of births, viz., 137,496, was higher than for any other year, with the exception of 1914, when 137,983 births were registered; but the birth rate per 1,000 persons, viz., 24.69, was the second lowest on record, the lowest being 23.53 in 1919.

TOTAL BIRTHS, 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Cap. Ter.	Aus- tralia.
1918	50,709	31,597	19,536	11,357	7,106	5,280	105	49	125,739
1919	48,532	31,619	18,699	11,060	6,937	5,310	106	27	122,290
1920	53,942	36,213	20,256	12,028	8,149	5,740	63	15	136,406
1921	54,636	35,591	20,329	11,974	7,807	5,755	79	27	136,198
1922 { Single births	54,035	35,474	19,614	11,752	7,933	5,704	70	30	134,612
Twins ..	1,126	(b) 791	(a) 373	246	(c) 198	(a) 113	..	2	2,849
Triplets ..	9	(a) 23	..	3	..	..	..	..	35
Total births	55,170	36,288	19,987	12,001	8,131	5,817	70	32	137,496

(a) One stillborn not included.

(b) Three stillborn twins not included.

(c) Ten stillborn twins

3. **Birth Rates, 1918 to 1922.**—(i) *Crude Birth Rate.* Owing, doubtless, to the effects of the war, the crude rates throughout the States are uniformly low. There was a slight increase in 1920, but it was not maintained in the two years following, and the rate for Australia is considerably under that of pre-war years, the figures for 1922 being 11.5 per cent. below that for 1914. The rates in the Territories show considerable fluctuation, but the numbers concerned are too small to allow of any satisfactory deductions therefrom.

CRUDE BIRTH RATE(a), 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	North. Ter.	Federal Capital Territory.	Aus- tralia.
1918	26.12	22.19	27.95	25.15	23.08	26.63	21.56	20.19	25.00
1919	24.28	21.46	25.80	23.61	21.71	25.90	22.77	11.68	23.53
1920	26.10	23.95	27.10	24.71	24.73	27.28	14.95	6.90	25.45
1921	25.93	23.16	26.64	24.08	23.39	26.98	20.22	10.87	24.95
1922	25.67	23.10	25.58	23.71	23.92	27.08	19.16	11.37	24.69
Density (b) (No. per square mile) ..	7.02	18.10	1.18	1.35	0.35	8.35	0.007	2.72	1.89

(a) Number of births per 1,000 of the mean annual population. (b) On 31st December, 1922.

The density of population for each State and for Australia as a whole is given in the table for the purpose of showing the influence, if any, of concentration of population on birth rate, in connexion with the disparities noticeable.

(ii) *Birth Rates at Child-bearing Ages.* The figures just given represent the "crude birth rate," i.e., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, i.e., from 15 to 45, furnishes, however, a more significant rate. This calculation has been made for the four last Census periods for which the information is available, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The following results have been obtained:—Total births per 1,000 women (married and unmarried) of ages 15 to 45:—Years 1880–82, 169.69; years 1890–92, 158.81; years 1900–02, 117.26; years 1910–12, 117.22. Nuptial births per 1,000 married women of ages 15 to 45:—Years 1880–82, 320.96; years 1890–92, 332.03; years 1900–02, 235.84; years 1910–12, 236.06.

4. **Birth Rates of Various Countries.**—(i) *Crude Rates.* A comparison with other countries shows that the Australian States occupy a rather low position, which is however, fortunately counterbalanced by a still lower position in regard to their death

rates, as will be seen from the table hereinafter in the section dealing with "Deaths." It will be noticed that, owing to the difficulty of procuring statistics in regard to the belligerent countries in the late war, a few of the rates quoted for continental countries are for rather remote years. Consequently it is not suggested that the comparison instituted in the attached table is exact. This does not however affect the fact that Australia takes a comparatively low position amongst the countries of the world as regards crude birth rate.

CRUDE BIRTH RATES (a).—VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ..	1909	44.0	Denmark	1920	25.4
Rumania	1914	42.5	Australia	1922	24.7
Ceylon	1921	40.8	Norway	1921	24.5
Bulgaria	1911	40.2	Western Australia ..	1922	24.0
Chile	1921	39.2	South Australia ..	1922	23.7
Serbia	1912	38.0	United States (b) ..	1920	23.7
Japan	1921	35.1	Scotland	1922	23.5
Jamaica	1921	35.0	New Zealand	1922	23.2
Spain	1921	30.4	Victoria	1922	23.1
Union of South Africa			United Kingdom ..	1921	22.5
(whites)	1921	28.4	Austria	1920	22.4
Netherlands ..	1921	27.4	Belgium	1920	21.5
Tasmania	1922	27.1	Sweden	1921	21.4
Hungary	1920	26.9	France	1920	21.3
Canada (excluding Que-			Italy	1919	21.2
bec)	1921	26.3	Switzerland	1921	20.8
Prussia	1920	25.9	England and Wales..	1922	20.6
Germany	1920	25.9	Finland	1919	19.2
New South Wales ..	1922	25.7	Irish Free State ..	1922	18.6
Queensland	1922	25.5			

(a) Number of births per 1,000 of the mean population. (b) Figures for "provisional birth-registration area," which includes about 60 per cent. of the population.

(ii) *Nuptial Birth Rates at Child-bearing Ages.* The wide discrepancies among the crude birth rates of the various countries are, to some extent, due to differences in sex and age constitution and in conjugal condition. If the birth rates be calculated per 1,000 women of child-bearing ages, the comparison gives more reliable results. The following table of the nuptial births per 1,000 married women of ages 15 to 45 in a number of countries has been taken from the *Annuaire International de Statistique*, and shows that nuptial births per 1,000 married women, aged 15 to 45 years, varied from 280 in Bulgaria to a minimum of 114 in France, Australia with a rate of 198 being midway between maximum and minimum.

NUPTIAL BIRTH—RATES PER 1,000 MARRIED WOMEN, AGED 15 TO 45 YEARS.—VARIOUS COUNTRIES.

Country.	Period.	Rate.	Country.	Period.	Rate.
Bulgaria	1910-11	280	Australia	1906-15	198
Ireland	1909-12	250	Hungary	1906-15	198
Netherlands ..	1905-14	233	Germany	1907-14	196
Finland	1906-15	230	Sweden	1908-13	196
Italy	1907-14	226	Denmark	1906-15	191
Norway	1907-14	224	New Zealand	1906-15	188
Austria	1908-13	219	Switzerland	1906-15	184
Spain	1906-15	218	England and Wales..	1906-15	171
Prussia	1907-14	204	Belgium	1908-13	161
Scotland	1906-15	202	France	1910-11	114

5. **Masculinity of Births.**—(i) *General.* The masculinity of births, i.e., the excess of males over females per 100 births registered, during the last five years varied from 0.25 in Western Australia in 1919 to 4.66 in Queensland in 1921. On account of the smallness of the numbers, the returns from the Northern Territory and the Federal Capital Territory have not been taken into consideration. The following table, which gives the values for the States and Australia for 1918 to 1922, shows that for Australia there was a steady increase of masculinity from 1918 to 1920, followed by decreases in 1921 and 1922.

MASCULINITY(a) OF BIRTHS REGISTERED, 1918 TO 1922.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Australia.
1918 ..	2.55	2.36	3.19	1.91	1.75	2.92	12.38	6.12	2.53
1919 ..	2.71	2.63	4.24	4.45	0.25	2.37	3.77	-25.93	2.92
1920 ..	2.67	2.99	4.04	2.73	4.45	1.32	-1.59	6.67	3.01
1921 ..	2.51	2.77	4.66	2.25	2.16	2.31	-1.27	11.11	2.85
1922 ..	2.29	3.27	2.70	2.49	2.40	2.97	8.77	6.25	2.67

(a) Excess of males over females per 100 total births.

NOTE.—The minus sign — denotes an excess of females over males per 100 total births.

(ii) *Masculinity of Ex-nuptial Births.* The masculinity of ex-nuptial births was as follows :—

MASCULINITY(a) OF EX-NUPTIAL BIRTHS, 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Australia.
1918 ..	1.33	-1.68	5.07	-6.14	-5.59	-0.36	14.29	..	0.24
1919 ..	4.93	0.22	8.91	4.84	-2.74	7.98	0.00	-100.00	4.03
1920 ..	3.87	8.20	11.52	-2.22	5.36	-3.63	-6.67	..	5.60
1921 ..	3.94	2.72	-0.94	6.10	6.03	1.26	15.38	..	2.96
1922 ..	3.11	1.75	6.44	9.55	3.26	-2.64	-5.88	..	3.37

(a) Excess of males over females per 100 total births.

NOTE.—The minus sign — denotes an excess of females over males per 100 total births.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births in the period under review, this has not been the case in regard to ex-nuptial births, since in every State except New South Wales a negative masculinity has been experienced. Little weight, however, can be attached to these results on account of the small totals on which they are based, and for the same reason the figures for the Northern Territory and Federal Capital Territory are not taken into consideration.

(iii) *Masculinity of Nuptial and Ex-nuptial Births, Various Countries.*—There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to the following table, for the period about 1906 to 1913, the masculinity in various countries ranged from 4.63 to 1.91, and from 5.90 to 0.06 for nuptial and ex-nuptial births respectively.

MASCULINITY OF BIRTHS.—VARIOUS COUNTRIES.

Country.	Period.	Masculinity of Births.(a)		Country.	Period.	Masculinity of Births.(a)	
		Nuptial Live Births.	Ex-nuptial Live Births.			Nuptial Live Births.	Ex-nuptial Live Births.
Spain ..	1906-13	4.63	5.90	Ireland ..	1906-12	2.61	1.63
Portugal ..	1906-10	3.93	0.06	New Zealand	1906-13	2.59	2.57
Finland ..	1906-13	3.03	2.09	Australia ..	1906-13	2.52	2.27
Sweden ..	1906-13	2.95	3.27	Netherlands	1906-13	2.49	1.53
Hungary ..	1906-13	2.86	2.02	Denmark ..	1906-13	2.43	2.22
Norway ..	1906-13	2.79	2.98	Switzerland	1906-13	2.38	1.21
Prussia ..	1906-13	2.79	2.12	Japan ..	1906-13	2.32	0.87
Russia, Euro- pean ..	1906-09	2.77	2.00	France ..	1906-11	2.21	1.59
Austria ..	1906-13	2.76	2.73	Chile ..	1906-13	2.20	2.81
Germany ..	1906-13	2.71	2.29	Belgium ..	1906-13	2.08	1.31
Italy ..	1906-13	2.64	2.29	Scotland ..	1906-13	2.05	2.14
Serbia ..	1906-10	2.62	2.86	England and Wales ..	1906-13	1.91	2.07

(a) Excess of males over females per 100 total births.

6. **Ex-nuptial Births.**—(i) *General.* The number of ex-nuptial births reached its maximum, 7,438, in 1913, but the numbers recorded in the last five years have been considerably less than those of the pre-war years.

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

EX-NUPTIAL BIRTHS, 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Aus- tralia.
1918 ..	2,625	1,849	1,066	456	286	279	21	..	6,582
1919 ..	2,495	1,826	1,078	433	292	326	26	1	6,477
1920 ..	2,582	1,902	1,033	450	317	303	15	..	6,602
1921 ..	2,640	1,725	1,062	377	315	318	26	..	6,463
1922 ..	2,667	1,602	932	356	337	265	17	..	6,176

(ii) *Rate of Ex-nuptiality, 1918 to 1922.* The rate of ex-nuptiality, *i.e.*, the percentage of ex-nuptial on total births has, on the whole, been fairly stationary during the last five years. The highest rate for the period occurred in 1919, and the lowest, 4.49 per cent., in 1922.

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Aus- tralia.
	%	%	%	%	%	%	%	%	%
1918 ..	5.18	5.85	5.46	4.02	4.02	5.28	20.00	..	5.23
1919 ..	5.14	5.77	5.76	3.92	4.21	6.14	24.53	3.70	5.30
1920 ..	4.79	5.25	5.10	3.74	3.89	5.28	23.81	..	4.84
1921 ..	4.83	4.85	5.22	3.15	4.03	5.53	32.91	..	4.75
1922 ..	4.83	4.41	4.66	2.97	4.14	4.56	24.29	..	4.49

A comparison of greater significance is obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45. The calculation has been made for Australia for the last four Census periods for which the information is available, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1,000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880–82, 14.49; years 1890–92, 15.93; years 1900–02, 13.30; years 1910–12, 12.53. Corresponding figures for those countries for which the nuptial birth rates were shown in a preceding paragraph are given in the next table.

**EX-NUPTIAL BIRTHS PER 1,000 UNMARRIED WOMEN AGED 15 TO 45 YEARS.—
VARIOUS COUNTRIES.**

Country.	Period.	Rate.	Country.	Period.	Rate.
Hungary	1906–15	38	Norway	1907–14	13
Austria	1908–13	30	Scotland	1906–15	13
Sweden	1908–13	26	Australia	1906–15	12
Denmark	1906–15	24	Belgium	1908–13	12
Germany	1907–14	23	New Zealand	1906–15	9
Prussia	1907–14	21	Switzerland	1906–15	8
Finland	1906–15	17	England and Wales	1906–15	7
France	1901–11	16	Netherlands	1905–14	5
Italy	1907–14	14	Ireland	1909–12	4
Spain	1906–15	14	Bulgaria	1910–11	4

(iii) *Comparison of Rates.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared, which shows that this is not the case:—

**CRUDE EX-NUPTIAL, NUPTIAL, AND TOTAL BIRTH RATES (a).—AUSTRALIA,
1918 TO 1922.**

Rates.	1918.	1919.	1920.	1921.	1922.
Ex-nuptial	1.32	1.26	1.24	1.18	1.11
Nuptial	23.93	22.52	24.50	23.77	23.58
Total	25.25	23.78	25.74	24.95	24.69

(a) Number of births per 1,000 of mean population.

7. Multiple Births.—Among the total number of 137,496 births registered in Australia in 1922 there were 134,612 single births, 2,849 twins, and 35 triplets. The number of cases of twins was 1,432, there being 15 stillbirths, and the number of cases of triplets, of which one was stillborn, 12. The total number of mothers was, therefore, 136,056, the proportion of mothers of twins being one in every 95, and of mothers of triplets one in every 11,338 of total mothers. The proportion of multiple births is remarkably constant.

**PERCENTAGE OF MOTHERS OF MULTIPLE BIRTHS.—AUSTRALIA,
1918 TO 1922.**

Year.	Cases of Twins.	Cases of Triplets.	Cases of Quadruplets.	Percentage of Cases of Multiple Births on total Mothers.	Number of Mothers to each Multiple Birth.
1918	1,370	8	..	1.10	90
1919	1,327	15	1	1.10	90
1920	1,521	16	..	1.13	88
1921	1,453	12	..	1.09	92
1922	1,432	12	..	1.06	94

8. **Ages of Parents.**—(i) *Single Births.* The relative ages of the parents of children registered in 1922 have been tabulated separately for male and female births, twins and triplets being distinguished from single births, and are shown for single ages and for every State in "Australian Demography," No. 40, published by this Bureau. In the present work the exigencies of space allow only the insertion of corresponding tables showing the relative ages of parents in groups of five years. The largest number of fathers in the case of single births is found at ages 30 to 34, and of mothers at ages 25 to 29. When, however, the ages of both parents are considered together, the largest number of single births occurred where both father and mother were between 25 and 29.

AGES OF PARENTS IN CASES OF SINGLE BIRTHS.—AUSTRALIA, 1922.

Ages of Fathers and Sexes of Children.			Total Children.	Ages of Mothers.							
				Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Un-specified.
Under 20	Males..	273	..	192	78	3	..	..	..	..	..
	Females	260	1	184	67	7	1	..	..	..	..
	Total ..	533	1	376	145	10	1	..	..	..	..
20 to 24	Males..	6,736	2	1,213	4,501	880	121	18	..	..	1
	Females	6,506	1	1,207	4,261	927	90	16	4	..	..
	Total ..	13,242	3	2,420	8,762	1,807	211	34	4	..	1
25 to 29	Males..	16,424	..	659	6,325	7,782	1,456	179	22	..	1
	Females	15,636	1	596	6,178	7,314	1,387	149	10	1	..
	Total ..	32,060	1	1,255	12,503	15,096	2,843	328	32	1	1
30 to 34	Males..	17,782	..	175	2,753	7,200	6,423	1,146	80	4	1
	Females	16,814	..	182	2,443	6,833	6,200	1,052	103	..	1
	Total ..	34,596	..	357	5,196	14,033	12,623	2,198	182	4	2
35 to 39	Males..	12,436	..	79	781	2,637	4,824	3,678	427	10	..
	Females	11,656	..	54	727	2,552	4,440	3,484	386	13	..
	Total ..	24,092	..	133	1,508	5,189	9,264	7,162	813	23	..
40 to 44	Males..	7,104	..	14	213	786	1,958	2,757	1,344	32	..
	Females	6,832	..	14	208	807	1,861	2,677	1,228	36	1
	Total ..	13,936	..	28	421	1,593	3,819	5,434	2,572	68	1
45 to 49	Males..	3,306	..	3	70	250	609	1,255	1,003	116	..
	Females	3,117	..	7	70	247	560	1,207	916	110	..
	Total ..	6,423	..	10	140	497	1,169	2,462	1,919	226	..
50 to 54	Males..	1,318	..	5	26	78	248	448	446	67	..
	Females	1,172	1	5	21	81	207	411	387	59	..
	Total ..	2,490	1	10	47	159	455	859	833	126	..
55 to 59	Males..	436	..	2	16	37	72	136	139	34	..
	Females	392	..	1	7	20	71	153	118	22	..
	Total ..	828	..	3	23	57	143	289	257	56	..
60 to 64	Males..	126	..	..	..	8	32	44	32	10	..
	Females	109	..	..	4	11	15	30	40	9	..
	Total ..	235	..	..	4	19	47	74	72	19	..
65 and upwards	Males..	51	..	..	3	4	6	18	14	6	..
	Females	50	..	..	..	5	12	21	9	3	..
	Total ..	101	..	..	3	9	18	39	23	9	..
Not stated	Males..	4	..	..	1	1	1	1	..	..	..
	Females	4	..	..	..	..	2	..	..	..	2
	Total ..	8	..	..	1	1	3	1	..	..	2
Nuptial children	Males..	65,996	2	2,342	14,767	19,666	15,750	9,680	3,507	279	3
	Females	62,548	4	2,250	13,986	18,804	14,846	9,200	3,201	253	4
	Total ..	128,544	6	4,592	28,753	38,470	30,596	18,880	6,708	532	7
Ex-nuptial children	Males..	3,151	10	805	1,141	548	338	217	80	8	4
	Females	2,917	14	714	1,042	519	348	199	67	7	7
	Total ..	6,068	24	1,519	2,183	1,067	686	416	147	15	11
Total children	Males..	69,147	12	3,147	15,908	20,214	16,088	9,897	3,587	287	7
	Females	65,465	18	2,964	15,028	19,323	15,194	9,399	3,268	260	11
	Total ..	134,612	30	6,111	30,936	39,537	31,282	19,296	6,855	547	18

(ii) *Twins.* The ages of parents of twins in 1922 are given hereunder:—

AGES OF PARENTS OF TWINS.—AUSTRALIA, 1922.

Ages of Fathers and Sexes of Children.			Total Children.	Ages of Mothers.						
				Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.
Under 20 ..	{	Males ..	6	5	..	1
		Females ..	4	3	1	..	..	..	..
		Total ..	10	8	2	..	..	..	..
20 to 24 ..	{	Males ..	86	13	48	24	1	..	..
		Females ..	105	11	65	26	1	..	2	
		Total ..	191	24	113	50	2	..	2	
25 to 29 ..	{	Males ..	263	13	84	133	27	6	..	
		Females ..	296	9	104	139	38	6	..	
		Total ..	559	22	188	272	65	12	..	
30 to 34 ..	{	Males ..	411	4	40	156	175	31	5	
		Females ..	357	..	40	117	159	37	4	
		Total ..	768	4	80	273	334	68	9	
35 to 39 ..	{	Males ..	307	2	16	43	118	122	6	
		Females ..	270	..	16	39	113	96	6	
		Total ..	577	2	32	82	231	218	12	
40 to 44 ..	{	Males ..	177	..	3	17	48	76	33	
		Females ..	189	..	5	12	40	90	42	
		Total ..	366	..	8	29	88	166	75	
45 to 49 ..	{	Males ..	89	..	2	7	28	36	14	
		Females ..	88	..	4	7	18	44	15	
		Total ..	177	..	6	14	46	80	29	
50 to 54 ..	{	Males ..	30	..	..	1	5	9	15
		Females ..	31	..	..	1	7	7	16
		Total ..	61	..	..	2	12	16	31
55 to 59 ..	{	Males ..	7	..	..	..	4	..	3
		Females ..	13	..	..	2	..	8	3
		Total ..	20	..	..	2	4	8	6
60 and over	{	Males ..	2	..	..	..	..	..	2
		Females ..	8	..	4	..	..	4	..
		Total ..	10	..	4	..	..	4	2
Not stated ..	{	Females ..	2	..	..	..	..	2	..
		Total ..	2	..	..	..	..	2	..
Nuptial children	{	Males ..	1,378	37	193	382	406	280	78	
		Females ..	1,363	23	238	344	376	294	88	
		Total ..	2,741	60	431	726	782	574	166	
Ex-nuptial children	{	Males ..	41	11	13	7	2	6	2	
		Females ..	67	11	15	19	8	12	2	
		Total ..	108	22	28	26	10	18	4	
Total children	{	Males ..	1,419	48	206	389	408	286	80	
		Females ..	1,430	34	253	363	384	306	90	
		Total ..	2,849	82	459	752	792	592	170	
									2	
										2

(iii) *Triplets*. Particulars regarding the ages of parents in cases of triplets are given in the next table:—

AGES OF PARENTS OF TRIPLETS.—AUSTRALIA, 1922.

Ages of Fathers and Sexes of Children.				Total Children.	Ages of Mothers.				
					20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.
25 to 29 ..	{ Males ..	..	..	3	3	..	..	..	..
	{ Females ..	..	..	3	..	3	..	..	..
	{ Total ..	..	..	6	3	3	..	..	..
30 to 34 ..	{ Males ..	..	..	3	..	3	..	..	..
	{ Females ..	..	..	2	..	..	2 (a)	..	..
	{ Total ..	..	..	5	..	3	2	..	..
35 to 39 ..	{ Males ..	..	..	6	2	3	1	..	..
	{ Females ..	..	..	12	1	..	5	6	..
	{ Total ..	..	..	18	3	3	6	6	..
45 to 49 ..	{ Males ..	..	..	4	..	..	..	2	2
	{ Females ..	..	..	2	..	..	..	1	1
	{ Total ..	..	..	6	..	..	..	3	3
Nuptial children	{ Males ..	..	..	16	5	6	1	2	2
	{ Females ..	..	..	19	1	3	7	7	1
	{ Total ..	..	..	35	6	9	8	9	3
Total children	{ Males ..	..	..	16	5	6	1	2	2
	{ Females ..	..	..	19	1	3	7	7	1
	{ Total ..	..	..	35	6	9	8	9	3

(a) Excluding 1 female still-born.

(iv) *Influence on Masculinity*. Valid deductions cannot, of course, be drawn from one year's figures as to variations in the masculinity of the births at different ages of the parents, but so far as the figures go the following conclusions are indicated:—In cases where the father is older than the mother the masculinity has a tendency to be above the average, while in cases where both parents belong to the same age group, or where the father is younger than the mother, the masculinity is rather below the average. It is also below the average in cases where the father, or both father and mother are under 25; and it is above the average where the mother alone is under 25.

9. *Birthplaces of Parents*.—The relative birthplaces of the parents of children whose births were registered during the year 1922 will be found tabulated in the Bulletin of "Australian Demography," published by this Bureau. A summary of the results of the tabulation is given hereunder.

BIRTHPLACES OF PARENTS.—AUSTRALIA, 1922.

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.	
	Single Births.	Twins.	Triplet.	Single Births.	Twins.	Triplet.	Single Births.	Twins.
AUSTRALASIA—								
New South Wales ..	41,678	461	2	43,924	451	2	2,386	19
Victoria ..	33,955	362	4	32,866	371	5	1,457	17
Queensland ..	13,544	121	..	15,408	153	..	839	7
South Australia ..	11,668	129	1	11,334	126	2	360	3
Western Australia ..	2,285	28	..	3,052	33	..	246	2
Tasmania ..	5,870	69	..	5,854	62	..	348	..
Northern Territory ..	26	..	..	38	1	..	19	..
Federal Capital Territory	3	..	..	..	..	..	..	..
New Zealand ..	1,011	11	1	723	3	..	32	1

BIRTHPLACES OF PARENTS.—AUSTRALIA, 1922—*continued.*

Birthplaces.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.	
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.
EUROPE—								
England	11,294	128	4	10,331	124	3	231	4
Wales	302	3	..	224	6	..	5	..
Scotland	2,565	19	..	2,399	25	..	63	1
Ireland	1,393	20	..	926	11	..	33	..
Isle of Man	17	1	..	11	..	..	..	..
Other European British Possessions	77	..	..	56	1	..	1	..
Austria-Hungary	60	1	..	25	1	..	..	..
Belgium	13	..	..	29	..	..	1	..
Denmark	155	1	..	45	1	..	2	..
France	56	..	..	75	..	..	2	..
Germany	469	5	..	154	..	..	6	..
Greece	177	..	..	97	..	..	..	..
Italy	329	5	..	212	1	..	2	..
Netherlands	52	2	..	20	1	..	..	..
Norway	90	..	..	14	..	..	1	..
Russia	259	1	..	108	1	..	2	..
Spain	32	..	..	18	..	..	1	..
Sweden	126	1	..	10	..	..	..	..
Switzerland	47	..	..	19	..	..	..	..
Other European Countries	22	..	..	18	..	..	..	..
ASIA—								
British India	121	2	..	79	1	..	2	..
Other Asiatic British Possessions	19	..	..	15	..	..	..	..
China	125	1	..	35	..	..	..	..
Japan	15	..	..	10	..	..	..	..
Syria	70	1	..	39	..	..	1	..
Other Asiatic Countries..	23	1	..	5	..	..	..	..
AFRICA—								
Union of S. Africa	107	2	..	105	1	..	8	..
Other African Countries	27	..	..	25	..	..	..	..
AMERICA—								
Canada	95	2	..	32	2	..	..	..
United States of America	195	..	..	88	..	..	6	..
Other American Countries	37	1	..	33	..	..	4	..
POLYNESIA—								
Fiji	17	..	..	23	1	..	..	..
Other Polynesian Islands	38	..	..	14	..	..	1	..
At Sea	66	..	..	33	1	..	1	..
Unspecified	14	..	..	18	..	..	8	..
Total	128,544	1,378	12	128,544	1,378	12	6,068	54

10. Occupations of Fathers.—(i) Year 1922. A summary of the occupations of the fathers of all nuptial children whose births were registered in 1922 is given in the following table :—

OCCUPATIONS OF FATHERS OF NUPTIAL CHILDREN.—AUSTRALIA, 1922.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.		CLASS III.—COMMERCIAL— <i>cont.</i>	
General Government	851	Carriages and Vehicles ..	32
Local Government	116	Harness, Saddlery & Leatherware ..	7
Defence	432	Ships and Boats	2
Law and Order	1,214	Building Materials	2
Religion	409	Furniture	44
Charities	1	Chemicals and By-products ..	2
Health	1,092	Paper and Stationery	48
Literature	109	Textile Fabrics	507
Science	57	Dress	133
Civil Engineering, Architecture, and Surveying	438	Fibrous Materials	10
Education	830	Animal Food	2,560
Fine Arts	117	Vegetable Food	829
Music	150	Groceries, Drinks, Narcotics, and Stimulants	1,318
Amusements	553	Living Animals	143
Total Professional	6,369	Leather, Raw Materials	23
CLASS II.—DOMESTIC.		Wool and Tallow	62
Hotelkeepers and Assistants ..	982	Hay, Corn, etc.	192
Others engaged in providing board and lodging	143	Other Vegetable Matter n.e.i. ..	68
Coachmen and Grooms	69	Wood and Coal	153
Hairdressers	535	Stone, Clay and Glass	22
Laundrymen	38	Ironmongery	162
Others engaged in domestic occupations	278	Merchants, Importers	488
Total Domestic	2,045	Shopkeepers and Assistants ..	1,315
CLASS III.—COMMERCIAL.		Dealers and Hawkers	334
Banking and Finance	637	Agents and Brokers	591
Insurance and Valuation	545	Clerks, Bookkeepers, etc. ..	4,659
Landed and House Property ..	201	Commercial Travellers, Salesmen ..	1,899
Property Rights n.e.i.	7	Others engaged in Commercial Pursuits	1,466
Books, Publications, Advertising ..	152	Speculators on Chance Events ..	62
Musical Instruments	13	Total Commercial	18,731
Prints, Pictures and Art Materials ..	7	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Ornaments and Small Wares	1	Aviation	6
Sports and Games	1	Railway Traffic	5,488
Watches, Clocks, Jewellery	6	Tramway Traffic	1,266
Arms and Ammunition	3	Road Traffic	6,012
Machinery	25	Sea and River Traffic	1,698
		Postal Service	684
		Telegraph and Telephone Service ..	638
		Messengers, etc.	17
		Total Transport & Communication ..	15,809

OCCUPATIONS OF FATHERS OF NUPTIAL CHILDREN.—AUSTRALIA, 1922
—continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS V.—INDUSTRIAL.		CLASS V.—INDUSTRIAL—cont.	
Books and Publications ..	831	Other Industrial Workers—	
Musical Instruments ..	57	Manufacturers, etc. ..	716
Prints, Pictures and Art Materials ..	53	Engineers, Firemen ..	3,225
Ornaments and Small Wares ..	173	Contractors ..	1,178
Equipment for Sports and Games ..	10	Labourers, undefined ..	24,746
Medals, Type, and Dies ..	22	Others	377
Watches, Clocks, and Scientific Instruments ..	138	Total Industrial ..	54,104
Surgical Instruments ..	19		
Arms and Ammunition ..	17		
Engines, Machines, Tools, and Implements ..	1,668	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Carriages and Vehicles ..	1,409	Agricultural	22,727
Harness, Saddlery & Leatherware ..	406	Pastoral	3,767
Ships, Boats, etc. ..	126	Dairy Farming	1,228
Furniture ..	817	Bees, Fisheries, and Wild Animals ..	453
Building Materials ..	1,037	Forestry	892
Chemicals and By-products ..	59	Water Conservation and Supply ..	114
Textile Fabrics ..	232	Mines and Quarries	3,484
Dress ..	1,948	Total Primary Producers ..	32,665
Fibrous Materials ..	52		
Animal Food ..	286		
Vegetable Food ..	1,452		
Groceries, Drinks, Narcotics, and Stimulants ..	328	CLASS VII.—INDEFINITE.	
Animal Matter n.e.i. ..	336	Independent Means, having no specific occupation ..	143
Workers in Wood n.e.i. ..	197	Occupation not stated ..	61
Vegetable Produce for Fodder ..	3	Total Indefinite ..	204
Paper ..	23		
Stone, Clay, Glass, etc. ..	525		
Jewellery and Precious Stones ..	250	CLASS VIII.—DEPENDENTS.	
Metals, other than Gold & Silver ..	2,944	Dependent Relatives ..	7
Gas, Electric Lighting, etc. ..	1,160	Total Dependents ..	7
Building—		Total all Occupations ..	129,934
Builders ..	615		
Stonemasons ..	168		
Bricklayers ..	544		
Carpenters ..	3,080		
Slaters ..	79		
Plasterers ..	388		
Painters ..	1,197		
Plumbers ..	827		
Signwriters ..	73		
Others ..	15		
Roads, Railways, Earthworks ..	178		
Disposal of the Dead ..	36		
Disposal of Refuse ..	84		

(ii) *Summary, 1918 to 1922.* The next table gives a summary in classes of the occupations of fathers of nuptial children in each of the last five years, with the percentage of each class on the total number of fathers. In 1922, 41.64 per cent. of fathers were of the industrial class, and 25.14 per cent. were of the agricultural, pastoral, mining, etc., class. In the five years under review, the greatest variations in the percentages of the various classes were an increase in the industrial class from 39.41 to 41.64 per cent., and a decline in the professional class from 6.01 to 4.90 per cent.

OCCUPATIONS OF FATHERS OF NUPTIAL CHILDREN.—AUSTRALIA, 1918 TO 1922.

Class.			1918.	1919.	1920.	1921.	1922.
I. Professional	..	{ No.	7,086	6,063	6,638	6,204	6,369
		{ %	6.01	5.29	5.17	4.83	4.90
II. Domestic	..	{ No.	2,082	1,885	2,165	2,319	2,045
		{ %	1.77	1.65	1.69	1.81	1.57
III. Commercial	..	{ No.	16,938	16,501	18,208	18,298	18,731
		{ %	14.38	14.41	14.19	14.26	14.41
IV. Transport and Com- munication	..	{ No.	14,381	13,735	15,285	15,351	15,809
		{ %	12.20	11.99	11.91	11.96	12.17
V. Industrial	..	{ No.	46,438	46,636	54,086	53,567	54,104
		{ %	39.41	40.72	42.15	41.75	41.64
VI. Agricultural, pastoral, mining, etc.	..	{ No.	30,805	29,591	31,744	32,405	32,665
		{ %	26.14	25.83	24.74	25.25	25.14
VII. Indefinite	..	{ No.	99	102	147	169	204
		{ %	0.08	0.09	0.11	0.13	0.16
VIII. Dependents	..	{ No.	6	22	55	13	7
		{ %	0.01	0.02	0.04	0.01	0.01
Total	..	{ No.	117,835	114,535	128,328	128,326	129,934
		{ %	100.00	100.00	100.00	100.00	100.00

11. *Mother's Age, Duration of Marriage, and Issue.*—(i) *General.* A tabulation has been made showing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1922 was 129,934, but in 82 cases the necessary information was lacking, and the following series of tables refers, therefore, to 129,852 nuptial confinements, viz., 128,462 single births, 1,378 cases of twins, and 12 cases of triplets. Ex-nuptial children—previous issue by the same father—are included as previous issue, but children by former marriages, and stillborn children are excluded. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shown in “Australian Demography,” No. 40.

(ii) *Duration of Marriage and Issue of Mothers.* The following table shows that the duration of marriage of mothers of nuptial children ranged from less than one year up to between 34 and 35 years, and that the average family increased fairly regularly with the duration of marriage. The average number of children of all marriages was 3.10, the corresponding figures for 1921 being 3.08; for 1920, 3.11; for 1919, 3.33; and for 1918, 3.34.

DURATION OF MARRIAGE AND ISSUE OF MOTHERS.—AUSTRALIA, 1922.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ..	20,509	20,800	1.01	18-19 ..	1,457	10,956	7.52
1-2 ..	11,903	13,214	1.11	19-20 ..	1,113	8,515	7.65
2-3 ..	11,880	20,895	1.76	20-21 ..	986	8,153	8.27
3-4 ..	12,137	24,834	2.05	21-22 ..	725	6,205	8.56
4-5 ..	8,277	19,963	2.41	22-23 ..	609	5,437	8.93
5-6 ..	7,463	20,436	2.74	23-24 ..	349	3,318	9.51
6-7 ..	7,086	21,437	3.03	24-25 ..	274	2,652	9.68
7-8 ..	7,188	24,242	3.37	25-26 ..	168	1,676	9.98
8-9 ..	6,454	24,569	3.81	26-27 ..	123	1,312	10.67
9-10 ..	5,418	22,574	4.17	27-28 ..	53	558	10.53
10-11 ..	5,155	23,177	4.50	28-29 ..	31	308	9.94
11-12 ..	4,375	21,187	4.84	29-30 ..	13	133	10.23
12-13 ..	3,815	20,087	5.27	30-31 ..	8	81	10.13
13-14 ..	3,180	17,735	5.58	31-32 ..	4	42	10.50
14-15 ..	2,826	16,695	5.91	32-33 ..	1	9	9.00
15-16 ..	2,465	15,508	6.29	34-35 ..	1	9	9.00
16-17 ..	2,097	14,040	6.70				
17-18 ..	1,709	12,122	7.09	Total ..	129,852	402,879	3.10

(iii) *Ages of Mothers and Issue.* The ages of mothers, issue, and average family are given in the attached table, which shows that the average family increased fairly regularly to a maximum of 7.67 children in the age-group 45 years and over, and that the greatest number of mothers occurs in the group 25 to 29 years.

AGES AND ISSUE OF MOTHERS.—AUSTRALIA, 1922.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	4,617	5,477	1.19	40-44 years ..	6,793	43,546	6.41
20-24 years ..	28,940	49,030	1.69	45 yrs. and over	533	4,087	7.67
25-29 „ ..	38,824	95,438	2.46				
30-34 „ ..	30,984	110,532	3.57				
35-39 „ ..	19,161	94,769	4.95	All ages ..	129,852	402,879	3.10

(iv) *Previous Issue of Mothers, Various Ages.* The previous issue, according to the age of the mother, is given in the following table. Three mothers aged 40-44 each had 18 children prior to their present confinement.

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES.—AUSTRALIA, 1922.

Previous Issue.	Mothers' Ages.							Total.
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	
0	3,852	15,092	12,144	5,057	1,708	391	23	38,267
1	707	9,297	11,210	6,169	2,083	411	24	29,901
2	52	3,375	7,211	5,710	2,605	587	26	19,566
3	5	929	4,426	4,895	2,778	707	27	13,767
4	1	206	2,396	3,740	2,518	738	41	9,640
5	..	36	1,014	2,611	2,236	763	39	6,699
6	..	2	306	1,525	1,913	730	64	4,540
7	..	3	92	760	1,382	670	66	2,973
8	..	..	21	342	943	583	55	1,944
9	..	..	4	122	523	482	56	1,187
10	..	..	..	35	269	313	45	662
11	..	..	..	12	127	208	32	379
12	..	..	..	3	56	114	21	194
13	..	..	..	..	10	50	8	68
14	..	..	..	3	7	22	2	34
15	..	..	..	..	2	13	3	18
16	..	..	..	..	..	4	1	5
17	..	..	..	..	1	4	..	5
18	..	..	..	..	..	3	..	3
Total Mothers	4,617	28,940	38,824	30,984	19,161	6,793	533	129,852

(v) *Previous Issue of Mothers of Twins and Triplets.* Figures regarding the previous issue of mothers of twins and triplets show that 343 mothers had twins at their first confinement ; 271 at their second ; 212 at their third ; 170 at their fourth ; 117 at their

fifth; 80 at their sixth; 74 at their seventh; 52 at their eighth; 24 at their ninth; 13 at their tenth; 10 at their eleventh; 4 at their twelfth; 5 at their thirteenth; and 1 one each at their fourteenth, fifteenth, and seventeenth.

Of the 12 cases of triplets, 3 occurred at the first confinement; 3 at the second; 3 at the third; and one each at the sixth, seventh, and twelfth.

12. *Interval between Marriage and First Birth.*—(i) *Interval and Sex of Children.* The following table shows the interval between marriage and first birth, distinguishing the sexes of the children. Twins and triplets are included, the eldest born only being enumerated:—

INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH.—AUSTRALIA, 1922.

Interval.	Number of First Children.			Interval.	Number of First Children.		
	Males.	Females.	Total.		Males.	Females.	Total.
Under 1 month	191	163	354	2 years ..	1,701	1,611	3,312
1 month ..	268	274	542	3 „ ..	796	695	1,491
2 months ..	368	394	762	4 „ ..	369	355	724
3 „ ..	496	498	994	5 „ ..	231	237	468
4 „ ..	638	575	1,213	6 „ ..	203	159	362
5 „ ..	855	754	1,609	7 „ ..	124	115	239
6 „ ..	1,042	955	1,997	8 „ ..	68	60	128
7 „ ..	1,064	1,108	2,172	9 „ ..	45	38	83
8 „ ..	772	768	1,540	10 „ ..	35	23	58
9 „ ..	1,781	1,735	3,516	11 „ ..	25	19	44
10 „ ..	1,744	1,603	3,347	12 „ ..	17	16	33
11 „ ..	1,249	1,164	2,413	13 „ ..	12	21	33
12 „ ..	965	930	1,895	14 „ ..	11	7	18
13 „ ..	745	689	1,434	15 „ ..	8	9	17
14 „ ..	646	596	1,242	16 „ ..	3	8	11
15 „ ..	542	497	1,039	17 „ ..	3	6	9
16 „ ..	428	424	852	18 „ ..	2	..	2
17 „ ..	460	392	852	19 „ ..	3	1	4
18 „ ..	394	349	743	20 „ ..	..	2	2
19 „ ..	297	342	639	21 „ ..	3	2	5
20 „ ..	269	270	539	23 „ ..	1	..	1
21 „ ..	291	262	553				
22 „ ..	268	256	524				
23 „ ..	236	216	452	Total ..	19,669	18,598	38,267

The masculinity of first births was 2.80 as compared with 2.67 for total births.

(ii) *Ages of Mothers and Interval.* The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shows the ages of mothers in the cases of ex-nuptial first births, of nuptial first births occurring less than nine months after marriage, and of nuptial first births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage shows that for all ages the ratio was about 2 to 3. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births is necessarily included among the births which occurred less than nine months after marriage, but information in connexion therewith is not available.

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, ETC.—AUSTRALIA, 1922.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
12 years	1	..	1	..	..	1
13 "	4	..	4	..	..	4
14 "	19	6	25	..	6	25
15 "	61	16	77	1	17	78
16 "	175	121	296	17	138	313
17 "	308	464	772	99	563	871
18 "	459	888	1,347	338	1,226	1,685
19 "	527	1,235	1,762	667	1,902	2,429
20 "	553	1,275	1,828	1,051	2,326	2,879
21 "	508	1,399	1,907	1,600	2,999	3,507
22 "	435	1,246	1,681	2,190	3,436	3,871
23 "	378	907	1,285	2,324	3,231	3,609
24 "	323	716	1,039	2,384	3,100	3,423
25 "	282	659	941	2,316	2,975	3,257
26 "	263	477	740	2,284	2,761	3,024
27 "	210	348	558	2,042	2,390	2,600
28 "	180	325	505	1,853	2,178	2,358
29 "	145	258	403	1,582	1,840	1,985
30 "	185	183	368	1,309	1,492	1,677
31 "	126	121	247	1,034	1,155	1,281
32 "	137	125	262	877	1,002	1,139
33 "	125	79	204	681	760	885
34 "	118	80	198	568	648	766
35 "	101	60	161	458	518	619
36 "	84	57	141	361	418	502
37 "	87	42	129	260	302	389
38 "	73	41	114	242	283	356
39 "	80	15	95	172	187	267
40 "	55	15	70	146	161	216
41 "	24	9	33	83	92	116
42 "	40	10	50	65	75	115
43 "	15	5	20	46	51	66
44 "	15	..	15	12	12	27
45 "	7	1	8	12	13	20
46 "	4	..	4	5	5	9
47 "	2	..	2	3	3	5
48 "	2	..	2	2	2	4
Unspecified	11	..	11	..	..	11
Total	6,122	11,183	17,305	27,084	38,267	44,389

13. Interval between Birth and Registration of Birth.—Information was obtained for the years 1911 to 1921 regarding the period which elapsed between birth and registration. A detailed table giving the results for 1921 is contained in Demography Bulletin No. 39, issued by this Bureau. The law relating to maternity allowances has tended to accelerate the registration of births; and during the year under review it was found that approximately 35 per cent. were registered in the first week.

The weighted average interval between the dates of birth and registration has been found to be about 13 days both for nuptial and ex-nuptial children since the granting of the maternity allowance.

§ 2. Marriages.

1. **Marriages, 1918 to 1922.**—The number of marriages registered in Australia in 1920 was 51,552, the highest number ever recorded. During 1922, 44,731 marriages were celebrated, and although this number did not reach the record of 1920, the number is very satisfactory. The number of marriages in each State for the years 1918 to 1922 is given hereunder :—

MARRIAGES, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Aus- tralia.
1918 ..	13,194	9,156	4,815	3,190	1,612	1,131	39	4	33,141
1919 ..	15,809	11,706	5,429	3,855	2,194	1,513	25	9	40,540
1920 ..	20,154	14,898	6,667	4,881	2,932	1,999	17	4	51,552
1921 ..	18,506	13,676	5,963	4,383	2,656	1,668	15	2	46,869
1922 ..	17,580	12,996	5,878	4,144	2,446	1,674	13	..	44,731

2. **Marriage Rates, 1918 to 1922.**—The number of marriages registered per thousand mean population is given in the following table for the same period :—

CRUDE MARRIAGE RATES(a), 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Aus- tralia.
1918 ..	6.79	6.43	6.89	7.07	5.24	5.70	8.01	1.65	6.59
1919 ..	7.91	7.95	7.49	8.23	6.87	7.38	5.37	3.89	7.80
1920 ..	9.75	9.85	8.92	10.03	8.90	9.50	4.04	1.84	9.62
1921 ..	8.78	8.90	7.81	8.82	7.96	7.82	3.84	0.81	8.59
1922 ..	8.18	8.27	7.52	8.19	7.20	7.79	3.56	..	8.03

(a) Number of marriages (not persons married) per 1,000 of mean annual population.

As in some international tabulations the marriage rates are calculated per 1,000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for Australia for the last four Census periods for which the particulars are available. The figures comprise in each case the Census year with the year immediately preceding and the year immediately following, and are as follows :—Years 1880–82, 48.98 ; years 1890–92, 45.74 ; years 1900–02, 42.14 ; years 1910–12, 50.10. These rates refer, of course, to persons married and not to marriages, as is the case in the preceding table.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with those of other countries shows that until recent years it was occasionally surpassed by the rate for Ontario, and equalled by the rate for some of the countries of the East of Europe, and that it was higher than the rates for the countries of Central and Western Europe, and far in excess of those for countries of the North of Europe. Some remarkable changes have taken place in the rates for several European countries. For example, the rate for France, which in 1913 was 7.5 per 1,000, increased to 15.9 in 1920, while the rate for Germany increased from 7.7 per 1,000 in 1913 to 14.5 in 1920. The following table shows that Australia, with a rate of 8.0, occupies a favourable position in the list of countries for which recent information is available.

CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
France	1920	15.9	England and Wales..	1922	7.9
Germany	1920	14.5	Canada (excluding		
Prussia	1920	14.5	Quebec).. ..	1921	7.9
Belgium	1920	14.0	Russia (European)	1909	7.9
Hungary	1920	11.2	Tasmania	1922	7.8
Serbia	1911	10.3	Spain	1921	7.7
United Kingdom ..	1919	9.9	New Zealand	1922	7.6
Bulgaria	1911	9.4	Queensland	1922	7.5
Japan	1921	9.1	Western Australia ..	1922	7.2
Netherlands	1921	9.1	Scotland	1922	7.0
Italy	1919	8.8	Norway	1921	6.9
Denmark	1920	8.8	Austria	1920	6.7
Union of South Africa	1921	8.5	Sweden	1921	6.6
Rumania	1914	8.5	Chile	1921	6.5
Switzerland	1921	8.4	Ireland	1919	6.1
Victoria	1922	8.3	Finland	1919	5.7
South Australia ..	1922	8.2	Ceylon	1921	5.5
New South Wales ..	1922	8.2	Jamaica	1921	3.5
Australia	1922	8.0			

4. Age and Conjugal Condition at Marriage.—(i) *General.* The ages at marriage of bridegrooms and brides will be found in "Australian Demography," Bulletin No. 40. A summary in age groups is given in the table hereunder, the previous conjugal condition of the contracting parties being distinguished. No less than 1,854 males who were less than twenty-one years of age were married during 1922. The corresponding number of females was 8,445. At the other extreme there were 40 men of sixty-five years and upwards, who described themselves as bachelors, and 6 spinsters of corresponding age.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED.—AUSTRALIA, 1922.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors.	Widowers.	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
Under 20 ..	859	..	..	859	5,677	2	1	5,680
20-24 years	12,853	30	3	12,886	18,564	107	40	18,711
25-29 "	14,945	182	59	15,186	10,933	393	142	11,468
30-34 "	7,284	437	120	7,841	3,842	478	183	4,503
35-39 "	3,078	505	157	3,740	1,499	538	141	2,178
40-44 "	1,192	418	97	1,707	564	338	65	967
45-49 "	566	362	62	990	259	292	34	585
50-54 "	230	313	32	575	100	179	10	289
55-59 "	112	276	25	413	41	110	6	157
60-64 "	58	205	12	275	17	92	5	114
65 years and over ..	40	207	7	254	6	66	2	74
Unspecified	5	..	..	5	4	1	..	5
Total	41,222	2,935	574	44,731	41,506	2,596	629	44,731

(ii) *Relative Ages, Bridegrooms and Brides.* The relative ages of bridegrooms and brides are shown for single years in "Australian Demography," Bulletin No. 40; a condensation into age-groups of five years is given below :—

RELATIVE AGES OF PERSONS MARRIED.—AUSTRALIA, 1922.

Ages.		Total Bride- grooms.	Ages of Brides.								
			Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and upwards.	Not stated.
Ages of Bridegrooms.	Under 20	859	3	609	232	14	1	..	..	3	..
	20 to 24	12,886	5	3,134	7,903	1,628	171	36	6	..	..
	25 to 29	15,186	1	1,400	7,194	5,374	1,005	178	28	6	..
	30 to 34	7,841	..	352	2,393	2,867	1,634	480	94	21	..
	35 to 39	3,740	..	127	727	1,074	960	624	167	61	..
	40 to 44	1,707	1	24	168	303	419	432	233	127	..
	45 to 49	990	1	13	63	134	175	225	180	199	..
	50 to 54	575	..	5	22	42	85	110	108	202	1
	55 to 59	413	..	3	7	21	34	60	95	193	..
	60 to 64	275	..	1	1	8	15	20	38	192	..
65 and upwards	254	..	1	..	3	4	13	18	215	..	
Not stated		5	..	..	1	..	..	..	..	4	..
Total Brides		44,731	11	5,669	18,711	11,468	4,503	2,178	967	1,219	5

(iii) *Average Ages, Bridegrooms and Brides.* The age at marriage of brides has remained fairly stationary during recent years at an average of about 26 years. The figures for the five years are :—1918, 26.11 years; 1919, 25.77 years; 1920, 26.11 years; 1921, 26.16 years; and 1922, 26.14 years. For the five years 1907–11 the average age was 25.70 years, compared with 25.92 years for the five years 1912–16, and 26.07 for the five years 1917–21. The average age of bridegrooms in 1918 was 29.55 years; in 1919, 29.10 years; in 1920, 29.55 years; in 1921, 29.74 years; and in 1922, 29.65 years. It follows, therefore, that brides are generally speaking rather less than three years and one-half younger than bridegrooms.

5. *Previous Conjugal Condition.*—The number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1922 has already been given. The following table shows the conjugal condition of the contracting parties :—

PREVIOUS CONJUGAL CONDITION OF PERSONS MARRIED.—AUSTRALIA, 1922.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	{ Bachelors ..	41,222	39,150	1,604	468
	{ Widowers ..	2,935	1,947	882	106
	{ Divorced ..	574	409	110	55
Total Brides		44,731	41,506	2,596	629

6. *Birthplaces of Persons Married.*—Information regarding the birthplaces of persons who were married in 1922 was not obtained in Western Australia; the totals in the following table, therefore, are exclusive of that State. As might be expected,

there were more brides than bridegrooms who were natives of Australia. In "Australian Demography," Bulletin No. 40, the relative birthplaces of bridegrooms and brides will be found tabulated in full detail.

BIRTHPLACES OF PERSONS MARRIED.—AUSTRALIA (a), 1922.

Birthplaces.	Bride-grooms.	Brides.	Birthplaces.	Bride-grooms.	Brides.
AUSTRALASIA—			ASIA—continued.		
New South Wales ..	14,015	15,112	China	25	7
Victoria	11,933	12,120	Other Asiatic		
Queensland ..	4,571	5,087	Countries ..	17	9
South Australia ..	3,911	3,863			
Western Australia ..	186	242			
Tasmania	1,872	1,934			
Northern Territory ..	11	7	AFRICA—		
Fed. Cap. Territory ..	..	1	Mauritius	4	2
New Zealand ..	379	282	Union of South Africa	51	59
			Other African Coun-tries	4	2
EUROPE—					
England	3,245	2,356			
Wales	81	66	AMERICA—		
Scotland	767	602	Canada	45	6
Ireland	412	218	Other American Bri-tish Possessions ..	4	3
Isle of Man ..	10	..	United States ..	73	38
Other European			Other American		
British Possessions	27	12	Countries ..	16	8
Denmark	56	7			
France	20	16			
Germany	114	42			
Greece	61	23			
Italy	78	41			
Netherlands ..	19	7			
Norway	27	1	POLYNESIA—		
Russia	80	22	Polynesian British		
Sweden	38	2	Possessions ..	12	9
Other European			South Sea Islands ..	10	14
Countries ..	46	21			
			At sea	8	5
			Not stated	6	8
ASIA—					
British India ..	45	27			
Other Asiatic British					
Possessions ..	6	4	Total ..	42,285	42,285

(a) Exclusive of Western Australia.

7. Occupations and Ages of Bridegrooms.—A tabulation has been made of the occupations and ages of all males married in Australia, and in "Australian Demography," Bulletin No. 40, the figures for 1922 refer to orders of occupations. An abridgment of this tabulation is given below. The average ages of the persons falling under the twenty-eight subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and who are living on their own means, and amongst whom a high average age may naturally be expected, the average age ranges from 28.12 for those engaged in the manufacture of animal and vegetable substances to 32.73 years in the class providing board and lodging.

OCCUPATIONS AND AGES OF BRIDEGROOMS.—AUSTRALIA, 1922.

Ages at Marriage.	Pro-fessional.		Domestic.		Commercial.							Transport and Communication.			
	Government, Defence, and Law.	Others.	Board and Lodging.	Others.	Property and Finance.	Art. Mechanic, and Textile Products.	Food and Drinks.	Animal and Vegetable Substances.	Fuel, Light, and Metals.	Merchants and Dealers.	Others.	Railways.	Roads and Trams.	Seas and Rivers.	Others.
15 years ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16 " ..	..	..	..	..	..	..	2	..	1	..	..	..	1	..	..
17 " ..	1	6	1	2	1	2	16	..	1	1	6	4	7	1	1
18 " ..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19 " ..	5	12	2	8	2	3	28	1	1	11	34	13	29	11	5
20 " ..	10	26	12	14	4	5	43	..	1	9	72	34	68	15	7
21 " ..	33	75	24	28	11	16	100	3	5	41	198	66	186	41	20
22 " ..	50	81	20	26	31	17	130	7	2	43	240	121	176	43	32
23 " ..	67	90	17	34	38	27	101	13	7	62	311	115	185	36	48
24 " ..	75	112	25	19	52	19	150	7	6	64	382	112	171	44	46
25 " ..	84	151	24	20	41	27	114	8	4	68	373	119	170	24	44
26 " ..	102	115	30	28	60	38	113	15	7	83	369	120	151	35	46
27 " ..	83	128	28	21	37	25	109	13	5	63	338	114	142	40	47
28 " ..	99	108	23	19	45	24	107	9	5	66	312	98	116	45	38
29 " ..	58	115	27	11	56	17	85	8	2	45	268	67	111	31	45
30 " ..	65	82	15	17	36	20	87	9	6	48	231	70	91	26	21
31 " ..	40	72	19	13	37	15	46	4	3	47	166	57	63	24	18
32 " ..	35	74	23	12	17	20	61	7	6	44	145	57	67	17	22
33 " ..	24	55	18	10	27	13	35	3	3	41	120	39	50	16	17
34 " ..	33	44	15	7	16	14	51	10	..	39	103	30	45	20	11
35 to 39 ..	96	170	58	37	56	35	106	22	12	119	317	99	145	78	36
40 " 44 ..	34	87	32	16	27	14	68	8	2	71	122	45	60	39	13
45 " 49 ..	18	51	21	9	13	10	28	5	3	32	83	17	34	23	6
50 and over	37	68	34	20	36	13	51	7	4	60	92	42	42	17	6
Not stated	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	1,050	1,722	468	371	643	374	1,633	159	86	1,062	4,295	1,446	2,132	633	529
Average age—															
year 1922	30·08	30·76	32·73	30·09	31·17	30·39	29·03	31·73	30·74	31·82	29·10	28·92	28·13	30·38	28·55

Ages at Marriage.	Manufacturing.								Primary Producers.				
	Art and Mechanic Productions.	Textiles and Fibrous Materials.	Food and Drinks.	Animal and Vegetable Substances.	Metals and Minerals.	Fuel, Light, and Energy.	Building and Construction.	Others.	Agricultural.	Pastoral	Mining and Quarrying.	Others.	Indefinite.
15 years ..	..	..	..	..	..	..	..	1	..	1	..	..	..
16 " ..	..	1	..	..	..	1	1	..	..	..	..	..	..
17 " ..	6	1	1	1	1	2	1	20	..	..	..	..	..
18 " ..	12	8	7	1	10	1	12	79	5	..	..	..	..
19 " ..	38	19	16	5	23	1	27	187	18	2	6	1	..
20 " ..	69	22	21	3	41	9	43	304	37	7	18	5	..
21 " ..	183	67	62	10	76	26	114	641	98	13	43	8	1
22 " ..	216	63	52	29	105	42	160	741	248	57	73	21	4
23 " ..	255	79	53	16	116	63	170	699	353	58	63	25	7
24 " ..	261	59	58	10	98	42	220	665	420	77	57	23	8
25 " ..	254	68	50	12	119	52	233	691	494	76	50	23	2
26 " ..	230	72	50	12	106	47	205	628	478	79	48	21	3
27 " ..	191	58	47	7	90	41	176	483	550	107	50	27	6
28 " ..	171	62	35	12	70	23	139	538	567	95	50	24	5
29 " ..	168	40	31	8	69	16	130	464	540	85	45	29	2
30 " ..	133	36	33	4	79	24	135	371	518	75	34	10	4
31 " ..	98	32	25	4	36	21	105	290	403	84	30	15	2
32 " ..	94	36	21	4	46	13	90	296	321	75	24	8	..
33 " ..	63	24	16	5	28	11	66	242	306	64	25	6	1
34 " ..	59	34	18	4	24	10	71	199	267	59	16	8	1
35 to 39 ..	190	62	49	17	94	33	185	741	206	37	12	5	2
40 " 44 ..	81	35	18	5	46	13	84	356	696	182	74	25	6
45 " 49 ..	45	16	10	3	23	8	52	195	291	83	34	12	11
50 and over	66	22	21	3	28	8	106	286	199	43	28	8	7
Not stated	..	..	..	..	..	..	..	4	238	78	48	9	75
Total ..	2,883	916	694	175	1,328	507	2,525	9,121	7,254	1,437	828	313	147
Average age— year 1922	28·49	28·84	28·49	28·12	28·56	28·14	29·78	29·05	30·51	31·92	30·01	29·12	45·17

8. **Fertility of Marriages.**—The quotient obtained by division of the nuptial births registered, *e.g.*, during the five years 1918 to 1922, by the number of marriages registered during the five years 1913 to 1917, *i.e.*, the period antecedent by five years to the period of the births, has been called the “fertility of marriages.” This works out at 3.22—in other words, the number of children to be expected from every marriage in Australia is about three. This method, while not absolutely accurate, generally furnishes results which agree fairly well with those found by more elaborate and careful investigation. For the year 1918 the result was 3.02; for 1919, 2.86; for 1920, 3.05; and for 1922, 3.22.

9. **Registration of Marriages.**—(i) *Marriages in each Denomination.* In all the States marriages may be celebrated either by ministers of religion whose names are registered for that purpose with the Registrar-General, or by certain civil officers—in most cases district registrars. Most of the marriages are celebrated by ministers of religion. The proportions so celebrated in 1922 were:—New South Wales, 95.27 per cent.; Victoria, 96.64 per cent.; Queensland, 96.57 per cent.; South Australia, 96.21 per cent.; Western Australia, 83.07 per cent.; and Tasmania, 97.85 per cent., the percentage for Australia being 95.34. The registered ministers in 1922 belonged to more than forty different denominations, some of which, however, can hardly be regarded as having any valid existence. A number of these have been omitted from the tabulation, and are bracketed under the heading “Other Christians.” The figures for 1922 are shown in the following table:—

MARRIAGES IN EACH DENOMINATION.—AUSTRALIA, 1922.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	Australia.
Church of England ..	7,581	3,774	1,799	1,111	934	671	7	15,877
Roman Catholic ..	3,596	2,286	1,284	496	374	266	2	8,304
Presbyterian Church ..	2,321	2,550	913	218	186	157	..	6,345
Methodist ..	2,213	1,834	972	1,243	338	304	..	6,904
Congregational ..	413	890	138	195	89	48	..	1,773
Baptist ..	259	567	160	246	43	81	..	1,356
Church of Christ ..	142	283	34	205	41	63	..	768
Lutheran ..	26	59	134	200	2	..	1	422
Greek Orthodox ..	20	9	..	..	5	..	..	34
Unitarian ..	12	3	..	3	..	..	..	18
Salvation Army ..	60	48	44	45	10	7	..	214
Seventh-Day Adventists ..	27	10	5	7	5	2	..	56
Other Christians ..	40	204	184	16	1	38	..	483
Hebrew ..	38	42	3	2	4	1	..	90
Registrar's Office ..	829	437	199	157	414	36	3	2,075
Unspecified ..	3	..	9	..	..	..	..	12
Total ..	17,580	12,996	5,878	4,144	2,446	1,674	13	44,731

(ii) *Number and Percentage in each Denomination, 1918 to 1922.*—The number of marriages according to denomination, and the percentages on total marriages, are shown in the next table:—

MARRIAGES IN EACH DENOMINATION.—AUSTRALIA, 1918 TO 1922.

Denomination.			1918.	1919.	1920.	1921.	1922.
Church of England	..	Total	11,471	14,264	18,859	16,499	15,877
		%	34.62	35.19	36.58	35.20	35.49
Roman Catholic	..	Total	6,425	7,390	9,141	8,458	8,304
		%	19.39	18.23	17.73	18.05	18.57
Presbyterian	..	Total	4,479	5,570	7,097	6,808	6,345
		%	13.51	13.74	13.76	14.52	14.18
Methodist	..	Total	5,052	6,321	7,796	7,320	6,904
		%	15.24	15.59	15.12	15.62	15.43
Congregational	..	Total	1,402	1,698	2,308	2,001	1,773
		%	4.23	4.19	4.48	4.27	3.96
Baptist	..	Total	1,041	1,342	1,744	1,461	1,356
		%	3.14	3.31	3.38	3.12	3.03
Church of Christ	..	Total	626	703	839	870	768
		%	1.89	1.73	1.63	1.86	1.72
Lutheran	..	Total	337	356	386	401	422
		%	1.02	.88	.75	.86	.94
Greek Orthodox	..	Total	27	24	30	23	34
		%	.08	.06	.06	.05	.08
Unitarian	..	Total	8	15	21	21	18
		%	.02	.04	.04	.04	.04
Salvation Army	..	Total	217	234	302	227	214
		%	.65	.58	.59	.48	.48
Seventh-Day Adventists		Total	50	58	60	57	56
		%	.15	.14	.12	.12	.13
Other Christians	..	Total	468	533	628	527	483
		%	1.41	1.31	1.22	1.12	1.08
Hebrew	..	Total	96	104	111	113	90
		%	.30	.26	.22	.24	.20
Registrar's Office	..	Total	1,424	1,887	2,198	2,074	2,075
		%	4.30	4.65	4.26	4.43	4.64
Unspecified	..	Total	18	41	32	9	12
		%	.05	.10	.06	.02	.03
			33,141	40,540	51,552	46,869	44,731

§ 3. Deaths.

1. Male and Female Deaths, 1918 to 1922.—The total numbers of deaths registered in each year from 1918 to 1922 inclusive are given in the two following tables. The annual average of male deaths during the period was 31,633, and of female deaths 23,938, the details being as follow:—

MALE DEATHS, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North Terr.	Fed. Cap. Terr.	Australia.
1918 ..	10,914	8,079	4,359	2,430	1,774	959	66	4	28,585
1919 ..	15,256	10,508	5,337	2,927	2,340	1,175	82	7	37,632
1920 ..	12,088	9,059	4,824	2,814	2,161	1,055	48	4	32,053
1921 ..	11,490	8,662	4,397	2,655	2,209	1,166	70	3	30,652
1922 ..	11,014	8,187	4,372	2,537	1,994	1,084	52	5	29,245
Rate (a), 1922	10.06	10.54	10.61	9.99	11.02	10.03	19.75	2.97	10.33

(a) Number of deaths per 1,000 of mean population.

FEMALE DEATHS, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Aus- tralia.
1918 ..	7,902	7,098	2,792	1,960	1,059	843	8	2	21,664
1919 ..	11,088	8,862	3,519	2,548	1,250	1,017	3	11	28,298
1920 ..	8,846	7,773	3,123	2,269	1,227	981	15	2	24,236
1921 ..	8,536	7,503	2,745	2,327	1,271	1,031	10	1	23,424
1922 ..	8,152	6,968	2,780	2,071	1,173	913	8	1	22,066
Rate (a), 1922	7.73	8.77	7.53	8.21	7.38	8.55	7.84	0.88	8.06

(a) Number of deaths per 1,000 of mean population.

2. **Male and Female Death Rates, 1922.**—The crude male and female death rates for 1922 only are given in the last line of the preceding tables. Western Australia has the highest rate for males, and Victoria for females, while South Australia has the lowest male, and Western Australia the lowest female death rate. The rates for the two Territories are based on very small numbers, and comparisons with the States would be misleading.

Owing to differences in age constitution in the six States, the crude rates are not, however, strictly comparable. A more satisfactory rate is furnished by the "Index of Mortality" (see sub-para. 13). The death rates for males and females in each State in five-year age groups for the three years 1920 to 1922, that is, for the Census year and for the year immediately preceding and following, are shown on page 993.

The large death rate in 1919 was due to the outbreak of influenza. The rates in the period 1918 to 1922, excluding 1919, were remarkably steady, averaging about 11.2 per 1,000 for males, and 8.6 per 1,000 for females.

MALE AND FEMALE DEATH RATES (a).—AUSTRALIA, 1918 TO 1922.

Year.	1918.	1919.	1920.	1921.	1922.
Male rate	11.50	14.40	11.75	11.05	10.33
Female rate	8.51	10.95	9.20	8.72	8.06
Crude total rate	9.99	12.69	10.50	9.91	9.21

(a) Number of deaths per 1,000 of mean population.

3. **Total Deaths, 1918 to 1922.**—The total number of deaths during each of the five years 1918 to 1922 is given below :—

TOTAL DEATHS, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Australia.
1918 ..	18,816	15,177	7,151	4,390	2,833	1,802	74	6	50,249
1919 ..	26,344	19,370	8,856	5,475	3,590	2,192	85	18	65,930
1920 ..	20,934	16,832	7,947	5,083	3,388	2,036	63	6	56,289
1921 ..	20,026	16,165	7,142	4,982	3,480	2,197	80	4	54,076
1922 ..	19,166	15,155	7,152	4,608	3,167	1,997	60	6	51,311

4. **Crude Death Rates, 1918 to 1922.**—The crude death rates for the five years 1918 to 1922 are given in the next table. The comparatively high rate in 1919 was due to the heavy mortality from influenza.

CRUDE DEATH RATES (a), 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Aus- tralia.
1918 ..	9.69	10.66	10.23	9.72	9.20	9.09	15.19	2.47	9.99
1919 ..	13.18	13.15	12.22	11.69	11.24	10.69	18.26	7.79	12.69
1920 ..	10.13	11.13	10.63	10.44	10.28	9.67	14.95	2.76	10.50
1921 ..	9.50	10.52	9.36	10.02	10.43	10.30	20.47	1.61	9.91
1922 ..	8.92	9.65	9.15	9.11	9.32	9.30	16.42	2.13	9.21

(a) Number of deaths per 1,000 of mean population for year.

5. **Death Rates of Various Countries.**—A comparison with foreign Countries is, owing to the different age constitution of the population, apt to show Australia in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the crude death rates of various countries for the latest available years :—

DEATH RATES (a).—VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand ..	1922	8.8	Belgium	1920	13.5
New South Wales ..	1922	8.9	Irish Free State ..	1922	14.1
South Australia ..	1922	9.1	Scotland	1922	14.9
Queensland	1922	9.1	Germany	1920	15.1
Australia	1922	9.2	Prussia	1920	16.3
Tasmania	1922	9.3	France	1920	17.2
Western Australia ..	1922	9.3	Hungary	1920	18.6
Victoria	1922	9.7	Finland	1919	18.9
Union of South Africa			Italy	1919	19.0
(Whites)	1921	10.4	Austria	1920	19.0
Canada (excluding Que- bec)	1921	10.6	Serbia	1912	21.1
Netherlands	1921	11.1	Spain	1921	21.4
Norway	1921	11.5	Bulgaria	1911	21.5
Sweden	1921	12.4	Japan	1921	22.7
United Kingdom ..	1921	12.5	Rumania	1914	23.8
Switzerland	1921	12.7	Jamaica	1921	28.4
Denmark	1920	12.9	Russia, European ..	1909	28.9
England and Wales ..	1922	12.9	Ceylon	1921	31.2
United States (Regis- tration Area) ..	1920	13.1	Chile	1921	33.4

(a) Number of deaths per 1,000 of mean population.

6. **Infantile Deaths and Death Rate.**—(i) *Australia, 1918 to 1922.* In the following table, which shows both the total number of deaths of children under one year and the rate per thousand births since 1918, males and females are distinguished. The universal

experience that during the first few years of life the excess of male births tends to disappear as a consequence of the higher death rate of male infants, is confirmed by the fact that out of 338,266 male infants born from 1918 to 1922, 23,756 died during their first year of life, while of 319,863 female infants the number who died was only 17,706.

INFANTILE DEATHS AND DEATH RATES.—AUSTRALIA, 1918 TO 1922.

Year.	Registered deaths under one year.			Rate of Infantile Mortality.(a).		
	Males.	Females.	Total.	Males.	Females.	Australia.
1918	4,178	3,186	7,364	64.82	51.99	58.57
1919	4,802	3,662	8,464	76.31	61.69	69.21
1920	5,386	4,045	9,431	76.66	61.15	69.14
1921	5,111	3,841	8,952	72.97	58.06	65.73
1922	4,279	2,972	7,251	60.62	44.42	52.74

(a) Number of deaths under 1 year per 1,000 births registered.

(ii) *States, 1918 to 1922.* Divided among the States and Territories the rates of infantile mortality during the last five years were as follows:—

INFANTILE MORTALITY RATES (a), 1918 TO 1922.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Terr.	Aus- tralia.
1918 ..	59.02	61.75	56.66	51.25	57.13	60.80	28.57	20.41	58.57
1919 ..	71.83	67.90	71.88	64.01	61.12	64.97	66.04	111.11	69.21
1920 ..	69.41	73.70	63.24	67.34	66.02	65.51	190.48	66.67	69.14
1921 ..	62.56	72.55	54.16	65.48	78.26	78.02	63.29	74.07	65.73
1922 ..	53.60	53.35	50.38	47.50	55.59	55.70	57.14	31.25	52.74

(a) Number of deaths under 1 year per 1,000 births registered.

The infantile mortality rate for Australia in 1922 was the lowest recorded; while, notwithstanding the increase of population, the actual number of infantile deaths was less than in any year since 1873. South Australia had the lowest, and Tasmania the highest rate.

(iii) *Districts.* The total number of births, and of deaths of children under one year of age and the average rate of infantile mortality for the five years 1918 to 1922 are shown in the following table for each of the fifty-nine districts for which the vital statistics have been tabulated. To afford a better idea of the geographical position of the districts, the name of a town situated in a fairly central part of each district has been added. The figures for the Federal Capital Territory and for Lord Howe Island are included for the sake of completeness, but are too small to be used in comparison with others. Remarkable

variations are shown in the mortality rate for the various districts. The lowest rate was experienced in the western district of South Australia (38.97 per 1,000 births), and the highest in the Trans-Darling Plains of New South Wales (114.88 per 1,000 births).

INFANTILE MORTALITY.—STATE DISTRICTS, 1918 TO 1922.

States and Territories.	Districts.	Towns.	Total Births, 1918-22.	Total Deaths of Children under one year, 1918-22.	Average Infantile Mortality per 1,000 Births, 1918-22.
New South Wales ..	Metropolitan ..	Sydney ..	107,366	7,183	66.90
" ..	North Coast ..	Grafton ..	21,900	1,001	45.66
" ..	Lower Hunter ..	Newcastle ..	28,280	1,989	70.33
" ..	Cumberland ..	Parramatta ..	14,464	792	54.76
" ..	South Coast ..	Nowra ..	10,051	565	56.21
" ..	Northern Tableland ..	Armidale ..	13,146	707	53.78
" ..	Central Tableland ..	Bathurst ..	16,621	1,198	72.08
" ..	Southern Tableland ..	Goulburn ..	13,615	854	62.72
" ..	North-Western Slope ..	Moree ..	5,448	302	55.43
" ..	Central-Western Slope ..	Dubbo ..	9,415	543	57.67
" ..	South-Western Slope ..	Temora ..	10,461	481	45.98
" ..	Riverina ..	Hay ..	6,014	342	56.87
" ..	Plains East of Darling ..	Cobar ..	1,658	120	72.38
" ..	Trans-Darling Plains ..	Broken Hill ..	4,544	520	114.88
" ..	Lord Howe Island ..	—	6	1	166.67
Victoria ..	Metropolitan ..	Melbourne ..	89,775	6,551	72.97
" ..	Central ..	Geelong ..	16,126	1,030	63.87
" ..	North-Central ..	Kyneton ..	6,259	356	56.88
" ..	Western ..	Hamilton ..	17,316	976	56.36
" ..	Wimmera ..	Horsham ..	7,128	427	59.90
" ..	Mallee ..	Ultima ..	6,004	399	66.45
" ..	Northern ..	Rochester ..	15,911	961	60.40
" ..	North-Eastern ..	Beechworth ..	4,693	227	48.37
" ..	Gippsland ..	Sale ..	8,096	358	44.22
Queensland ..	Metropolitan ..	Brisbane ..	29,600	2,072	70.00
" ..	Moreton ..	Ipswich ..	11,700	564	48.21
" ..	Wide Bay ..	Maryborough ..	11,747	600	51.08
" ..	Port Curtis ..	Rockhampton ..	7,607	491	64.55
" ..	Edgecumbe ..	Townsville ..	9,822	550	55.99
" ..	Rockingham ..	Cairns ..	5,427	243	44.78
" ..	York Peninsula ..	Cooktown ..	1,047	75	71.63
" ..	Carpentaria ..	Croydon ..	1,826	132	72.29
" ..	Central-Western ..	Winton ..	547	45	82.18
" ..	South-Western ..	Charleville ..	1,333	93	69.77
" ..	Central ..	Blackall ..	3,141	170	54.12
" ..	Maranoa ..	Roma ..	1,859	110	59.17
" ..	Downs ..	Toowoomba ..	13,151	695	52.85
South Australia ..	Metropolitan ..	Adelaide ..	29,006	1,907	65.74
" ..	Central ..	Gawler ..	11,831	541	45.73
" ..	Lower North ..	Redruth ..	9,419	629	66.78
" ..	Upper North ..	Port Augusta ..	2,837	162	57.10
" ..	South-Eastern ..	Mount Gambier ..	2,915	121	41.51
" ..	Western ..	Port Lincoln ..	2,412	94	38.97
Western Australia ..	Metropolitan ..	Perth ..	19,201	1,345	70.05
" ..	Northern Agricultural ..	Geraldton ..	5,434	311	57.23
" ..	South-Western ..	Katanning ..	8,843	425	48.06
" ..	Eastern Goldfields ..	Kalgoorlie ..	3,624	272	75.06
" ..	Northern Goldfields ..	Pilbara ..	653	54	82.69
" ..	North-Western ..	Roebourne ..	196	8	40.82
" ..	Northern ..	Broome ..	179	16	89.38
Tasmania ..	Hobart ..	Hobart ..	7,545	563	74.62
" ..	Launceston ..	Launceston ..	4,418	329	74.47
" ..	North-Eastern ..	Scottsdale ..	2,788	164	78.82
" ..	North-Western ..	Stanley ..	7,047	431	61.16
" ..	Midland ..	Zeehan ..	2,767	129	46.62
" ..	South-Eastern ..	Sorell ..	2,694	153	56.79
" ..	South-Western ..	Franklin ..	643	46	71.54
Northern Territory ..	..	Darwin ..	423	31	73.29
Federal Capital Territory ..	..	Canberra ..	150	8	53.33

(iv) *Various Countries and Cities.* Compared with other countries, the cities and States of Australia occupy a very favourable position, being surpassed by New Zealand only. It may be pointed out also in connexion with the rates hereunder, that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined tables relate to the latest years for which returns are available :—

INFANTILE MORTALITY RATES (a).—VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
New Zealand ..	1922	42	23.2	Denmark ..	1920	91	25.4
South Australia ..	1922	48	23.7	Scotland ..	1922	101	23.5
Queensland ..	1922	50	25.5	Belgium ..	1919	103	16.5
Australia ..	1922	53	24.7	France ..	1919	123	12.6
Victoria ..	1921	53	23.1	Germany ..	1920	131	25.9
New South Wales	1922	54	25.7	Finland ..	1919	135	19.2
Western Australia	1922	56	24.0	Italy ..	1917	140	19.0
Tasmania ..	1922	56	27.1	Prussia ..	1920	142	25.7
Norway ..	1921	63	24.5	Serbia ..	1911	146	36.2
Sweden ..	1921	65	21.4	Spain ..	1921	147	30.4
Irish Free State ..	1922	68	18.6	Bulgaria ..	1911	156	40.2
Netherlands ..	1921	76	27.4	Austria ..	1919	156	18.0
England and Wales	1922	77	20.6	Japan ..	1921	168	35.1
Union of South	1919	82	28.9	Jamaica ..	1920	173	40.8
Africa (Whites)				Rumania ..	1914	187	42.5
United Kingdom ..	1921	83	22.5	Ceylon ..	1921	192	40.8
Switzerland ..	1920	84	20.9	Russia, European	1909	248	44.0
United States (Re-	1920	86	23.7	Hungary ..	1915	264	23.5
gistration Area)				Chile ..	1914	286	37.0
Canada (excluding	1921	88	26.3				
Quebec)							

(a) Number of deaths under 1 year per 1,000 births registered. (b) Number of births per 1,000 of mean population.

INFANTILE MORTALITY RATES (a).—VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality. (a)	City.	Year.	Rate of Infantile Mortality. (a)
Stockholm ..	1922	47	Liverpool ..	1922	94
Amsterdam ..	1922	49	Antwerp ..	1921	98
Christchurch ..	1921	54	Hamburg ..	1922	109
Auckland ..	1921	54	Monte Video ..	1916	111
Zürich ..	1916	55	Dublin ..	1922	116
Rome ..	1915	56	Dresden ..	1922	116
Brisbane ..	1922	57	Glasgow ..	1922	120
Sydney ..	1922	58	Genoa ..	1916	126
Adelaide ..	1922	58	Leipzig ..	1922	128
Melbourne ..	1922	58	Munich ..	1922	131
Perth ..	1922	58	Cologne ..	1922	131
Wellington ..	1921	61	Prague ..	1922	131
Christiania ..	1922	66	Aberdeen ..	1922	133
Hobart ..	1922	72	Chicago ..	1916	145
Geneva ..	1916	73	Vienna ..	1922	149
London ..	1922	74	Marseilles ..	1916	157
New York ..	1922	74	Berlin ..	1922	163
Copenhagen ..	1922	76	Warsaw ..	1922	165
Birmingham ..	1922	85	Rio de Janeiro ..	1912	174
Washington ..	1919	85	Madrid ..	1915	177
Paris ..	1922	87	Breslau ..	1922	184
Edinburgh ..	1922	91	Florence ..	1916	192
Toronto ..	1917	92	Montreal ..	1911	242
Buenos Aires ..	1916	94	Petrograd ..	1912	249
Manchester ..	1922	94	Madras ..	1922	300
Belfast ..	1922	94	Bombay ..	1922	402

(a) Number of deaths under 1 year per 1,000 births registered.

Information relative to the causes of death of children under one year of age will be found in sub-section 18.

7. **Deaths in Age-Groups, 1918 to 1922.**—A distribution into age-groups has been made of the 277,855 deaths which occurred in Australia from 1918 to 1922, and the results have been tabulated for each State. It is, however, sufficient here to show the results for Australia as a whole, which are as follows:—

DEATHS IN AGE GROUPS.—AUSTRALIA, 1918 TO 1922.

Age-Group.	Males.	Females.	Total.	Percentage on Total Males.	Percentage on Total Females.	Percentage on Total.
Under 1 year ..	23,756	17,706	41,462	15.02	14.79	14.92
1 year and under 5 ..	8,408	7,250	15,658	5.32	6.06	5.64
5 years and under 20 ..	8,172	6,663	14,835	5.17	5.57	5.34
20 years and under 40	21,485	19,303	40,788	13.58	16.12	14.68
40 years and under 60	35,291	22,439	57,730	22.31	18.75	20.78
60 years and under 65	12,862	7,519	20,381	8.13	6.28	7.33
65 years and over ..	47,893	38,753	86,646	30.28	32.38	31.18
Age unspecified ..	300	55	355	0.19	0.05	0.13
Total ..	158,167	119,688	277,855	100.00	100.00	100.00

8. **Deaths at Single Ages and in Age-Groups, 1922.**—(i) *General.* The 51,311 deaths registered in Australia in the year 1922 will be found tabulated under single years, and in groups of five years for each State and Territory, in Bulletin No. 40, "Australian Demography, 1922." It has been thought advisable to tabulate the deaths during the first two years of life in greater detail. The first month has, therefore, been shown in weeks, and the twenty-three months up to the end of the second year in months. The figures indicate that a great number of children died during the first week, and that the mortality lessens towards the end of the second year. A summary for Australia is given in the following table:—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS.—AUSTRALIA, 1922.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Total under 1 month ..	2,332	1,623	3,955	Total 20-24 years ..	648	633	1,281
" 1 month and under 3 ..	589	408	997	" 25-29 ..	801	770	1,571
" 3 months and under 6 ..	599	383	982	" 30-34 ..	881	874	1,755
" 6 months and under 12 ..	759	558	1,317	" 35-39 ..	1,039	905	1,944
				" 40-44 ..	1,131	861	1,992
				" 45-49 ..	1,432	937	2,369
Total under 1 year ..	4,279	2,972	7,251	" 50-54 ..	1,715	1,137	2,852
				" 55-59 ..	2,157	1,299	3,456
1 year and under 2 ..	701	553	1,254	" 60-64 ..	2,634	1,540	4,174
2 years ..	290	226	516	" 65-69 ..	2,580	1,667	4,247
3 ..	188	169	357	" 70-74 ..	2,202	1,581	3,783
4 ..	137	130	267	" 75-79 ..	2,053	1,764	3,817
				" 80-84 ..	1,492	1,461	2,953
				" 85-89 ..	930	976	1,906
Total under 5 years ..	5,595	4,050	9,645	" 90-94 ..	325	331	656
				" 95-99 ..	64	95	159
Total 5-9 years ..	552	444	996	" 100 and over ..	19	10	29
" 10-14 ..	413	325	738	Age Unspecified ..	40	15	55
" 15-19 ..	542	391	933				
				Total All Ages ..	29,245	22,066	51,311

(ii) *Rates.* The following tables give the death rate per 1,000 living at each age for the three years 1920, 1921, and 1922, viz., the Census year 1921, and the years immediately preceding and following. The Northern Territory is included with South Australia, and the Federal Capital Territory with New South Wales:—

AVERAGE ANNUAL DEATH RATES.—AGE-GROUPS, 1920 TO 1922.

Age-Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Australia.
MALES.							
0 to 4 years ..	21.49	22.61	20.73	20.01	23.88	20.72	21.64
5 „ 9 „ ..	1.85	2.15	1.96	2.25	2.24	2.04	2.02
10 „ 14 „ ..	1.59	1.61	1.58	1.56	1.42	1.83	1.59
15 „ 19 „ ..	2.16	2.07	2.90	2.42	2.37	2.66	2.30
20 „ 24 „ ..	2.74	3.06	3.54	3.33	3.96	3.23	3.10
25 „ 29 „ ..	3.36	3.60	4.37	3.64	4.08	5.05	3.70
30 „ 34 „ ..	4.13	3.70	4.58	4.00	5.40	4.59	4.16
35 „ 39 „ ..	5.36	5.32	5.95	5.18	6.42	4.79	5.48
40 „ 44 „ ..	7.85	6.60	7.86	6.20	7.90	5.98	6.89
45 „ 49 „ ..	9.61	9.80	10.60	8.81	12.09	8.71	9.91
50 „ 54 „ ..	12.38	12.24	14.23	11.76	17.18	11.51	12.90
55 „ 59 „ ..	18.72	18.24	20.34	19.70	23.76	13.44	19.04
60 „ 64 „ ..	28.35	28.48	30.36	25.63	34.19	23.95	28.71
65 „ 69 „ ..	43.00	44.38	44.93	42.31	49.51	38.53	43.74
70 „ 74 „ ..	65.81	65.16	64.56	62.01	72.15	53.55	64.88
75 „ 79 „ ..	105.54	107.84	103.32	106.23	115.56	109.46	106.53
80 „ 84 „ ..	159.12	163.74	159.06	161.73	184.49	132.47	160.73
85 „ 89 „ ..	271.79	266.12	227.79	226.87	283.46	232.39	259.17
90 and over ..	368.58	387.01	314.96	387.09	566.67	350.00	376.08

FEMALES.							
0 to 4 years ..	16.92	17.91	16.05	16.25	18.80	16.74	17.09
5 „ 9 „ ..	1.66	1.95	1.89	2.27	1.28	2.09	1.82
10 „ 14 „ ..	1.21	1.20	1.43	1.34	1.23	1.63	1.27
15 „ 19 „ ..	1.63	2.00	1.99	2.72	1.34	2.58	1.90
20 „ 24 „ ..	2.43	2.92	2.81	2.85	3.07	3.74	2.75
25 „ 29 „ ..	3.47	3.55	3.61	3.85	3.99	3.87	3.59
30 „ 34 „ ..	3.85	4.13	4.11	4.21	4.60	4.41	4.06
35 „ 39 „ ..	4.64	4.98	5.80	5.18	4.90	5.98	5.00
40 „ 44 „ ..	5.15	5.74	6.03	4.98	6.39	5.48	5.51
45 „ 49 „ ..	6.71	6.91	6.76	6.40	8.12	7.31	6.87
50 „ 54 „ ..	9.35	9.11	9.11	9.10	10.62	8.61	9.27
55 „ 59 „ ..	13.17	12.87	13.60	10.85	12.81	14.23	12.92
60 „ 64 „ ..	19.08	19.06	19.71	18.27	17.78	20.13	19.05
65 „ 69 „ ..	31.59	31.69	30.81	32.89	30.49	34.72	31.76
70 „ 74 „ ..	50.24	51.83	50.61	45.65	54.20	49.42	50.43
75 „ 79 „ ..	88.19	88.52	88.10	83.98	96.43	80.32	87.81
80 „ 84 „ ..	140.29	143.71	126.40	132.25	137.07	126.00	138.32
85 „ 89 „ ..	225.11	231.45	210.65	193.54	219.51	208.79	221.44
90 and over ..	380.95	321.79	288.89	337.50	478.26	352.94	341.68

PERSONS.

0 to 4 years ..	19.24	20.30	18.45	18.17	21.39	18.75	19.40
5 „ 9 „ ..	1.76	2.05	1.93	2.26	1.76	2.07	1.92
10 „ 14 „ ..	1.40	1.40	1.51	1.45	1.33	1.73	1.43
15 „ 19 „ ..	1.90	2.03	2.45	2.57	1.86	2.62	2.10
20 „ 24 „ ..	2.58	2.99	3.17	3.09	3.52	3.49	2.92
25 „ 29 „ ..	3.42	3.57	4.00	3.75	4.03	4.43	3.64
30 „ 34 „ ..	3.99	3.92	4.37	4.10	5.03	4.50	4.11
35 „ 39 „ ..	5.03	5.14	5.88	5.18	5.72	5.39	5.24
40 „ 44 „ ..	5.99	6.16	7.04	5.60	7.23	5.73	6.22
45 „ 49 „ ..	8.21	8.30	8.89	7.62	10.41	8.04	8.44
50 „ 54 „ ..	10.97	10.67	12.04	10.46	14.58	10.16	11.20
55 „ 59 „ ..	16.19	15.60	17.57	15.32	19.61	13.80	16.22
60 „ 64 „ ..	24.11	23.93	25.99	22.13	27.90	22.13	24.22
65 „ 69 „ ..	37.81	37.90	39.23	37.80	41.71	36.73	38.17
70 „ 74 „ ..	58.34	58.09	58.64	53.85	64.31	51.54	57.82
75 „ 79 „ ..	97.02	97.07	96.41	94.82	106.68	93.60	96.98
80 „ 84 „ ..	149.75	152.49	144.74	145.42	162.58	128.81	149.09
85 „ 89 „ ..	248.05	246.87	219.48	206.49	252.00	219.14	238.91
90 and over ..	374.81	349.09	304.15	355.73	528.30	351.64	357.36

The tables show a high death rate for children under five years of age, but it rapidly diminishes until, at ages 10 to 14, the rate is 1.43 per 1,000, which is the lowest at any age. The rate thereafter gradually rises with increasing age until, at the ages 90 and over, more than one-third die every year.

9. Deaths of Centenarians, 1922.—Particulars concerning the twenty-nine persons who died in 1922 aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, absolute reliance cannot be placed on the accuracy of the ages shown, owing to the well-known tendency of very old people to overstate their ages. No attempt has been made by the Commonwealth Bureau of Census and Statistics to verify the truth of the statements made. The fact must not be disregarded in connexion with this question that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children.

DEATHS OF CENTENARIANS.—AUSTRALIA, 1922.

Age.	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birthplace.	Length of Residence in Australia.	Conjugal Condition.
MALES.							
110	Auburn ..	N.S.W. ..	Senility ..	Carpenter	Ireland ..	60 years ..	Married
108	Brisbane ..	Queensland	" ..	Labourer..	Ireland ..	68 " ..	Single
105	Deloraine ..	Tasmania	Pneumonia	Farmer ..	England ..	77 " ..	Married
104	Newtown ..	N.S.W. ..	Bronchitis..	Manufac- turer	" ..	30 " ..	"
102	Goulburn ..	" ..	Senility ..	Farmer ..	Ireland ..	72 " ..	"
102	Manly ..	" ..	Chronic Cystitis	Gardener	" ..	55 " ..	Single
102	St. Arnaud	Victoria ..	Senility ..	Farm Labourer	Scotland	67 " ..	"
102	Surrey Hills	" ..	" ..	Corn Mer- chant	England ..	30 " ..	Married
102	Brunswick	" ..	" ..	Shipwright	" ..	71 " ..	"
102	Benalla ..	" ..	" ..	Farmer ..	" ..	74 " ..	"
102	Longford ..	Tasmania	" ..	Labourer..	" ..	84 " ..	"
101	Echuca ..	Victoria ..	" ..	Gentleman	" ..	60 " ..	"
100	Paddington	N.S.W. ..	" ..	Miner ..	China ..	73 " ..	"
100	Hawthorn	Victoria ..	" ..	Gentleman	Syria ..	22 " ..	"
100	Clifton Hill	" ..	" ..	Miner ..	England ..	67 " ..	Single
100	Carlton ..	" ..	Myocarditis	Cab Driver	Ireland ..	70 " ..	Married
100	Mt. Margaret	W. Australia	Senility ..	Hotel Yard- man	England ..	26 " ..	Unspecified
100	Wynyard ..	Tasmania	" ..	Grazier ..	Ireland ..	73 " ..	Married
100	Launceston	" ..	" ..	Pensioner	England ..	71 " ..	"

FEMALES.

104	Caulfield ..	Victoria ..	Senility ..	..	England ..	70 years	Married
102	Tingha ..	N.S.W. ..	" ..	..	N.S.W. ..	Native ..	"
102	Romsey ..	Victoria ..	" ..	..	Ireland ..	70 years ..	"
102	Prahran ..	" ..	Pneumonia	..	" ..	71 " ..	"
102	Charters Towers	Queensland	Senility ..	..	England ..	32 " ..	"
101	Chatswood	N.S.W. ..	" ..	..	" ..	77 " ..	Single
101	Brisbane ..	Queensland	" ..	..	Ireland ..	46 " ..	"
101	Longford ..	Tasmania	" ..	..	England ..	89 " ..	Married
100	Portland ..	Victoria ..	" ..	..	" ..	82 " ..	"
100	Hindmarsh	S. Australia	" ..	..	" ..	68 " ..	"

10. Length of Residence in Australia of Persons who Died in 1922.—The length of residence in Australia of all persons whose deaths were registered in the year 1922 has been tabulated for all the States, and a summary of the results is shown below:—

LENGTH OF RESIDENCE IN AUSTRALIA OF PERSONS WHO DIED IN 1922.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in Australia ..	18,029	14,618	32,647	Resident 25 to 29 years	260	135	395
Resident under 1 year ..	112	43	155	" 30 to 34 " ..	734	381	1,115
" 1 year ..	90	45	135	" 35 to 39 " ..	1,059	659	1,718
" 2 years ..	50	62	112	" 40 to 44 " ..	1,227	604	1,831
" 3 " ..	21	33	54	" 45 to 49 " ..	662	402	1,064
" 4 " ..	13	11	24	" 50 to 54 " ..	708	504	1,212
" 5 " ..	20	9	29	" 55 to 59 " ..	671	630	1,301
" 6 " ..	38	22	60	" 60 to 64 " ..	923	881	1,804
" 7 " ..	54	22	76	" 65 yrs. and over	1,595	1,781	3,376
" 8 " ..	81	61	142	Length of residence			
" 9 " ..	129	97	226	not stated ..	1,681	508	2,189
" 10 to 14 years	610	331	941				
" 15 to 19 " ..	186	84	270				
" 20 to 24 " ..	292	143	435	Total ..	29,245	22,066	51,311

11. Birthplaces of Persons who Died in 1922.—The following table gives the birthplaces of persons whose deaths were registered in 1922. Full particulars will be found in "Australian Demography," Bulletin No. 40.

BIRTHPLACES OF PERSONS WHO DIED IN 1922.—AUSTRALIA.

Birthplace.	Males.	Females.	Total.	Birthplace.	Males.	Females.	Total.
AUSTRALASIA—				ASIA— <i>continued.</i>			
New South Wales	6,769	5,668	12,437	China	291	4	295
Victoria ..	5,618	4,413	10,031	Japan	22	1	23
Queensland ..	2,007	1,507	3,514	Other Asiatic			
South Australia	1,919	1,519	3,438	Countries ..	44	8	52
Western Australia	620	507	1,127				
Tasmania ..	1,091	998	2,089	AFRICA—			
Northern Territory	5	6	11	Union of Sth. Africa	24	11	35
New Zealand ..	177	109	286	Other African Brit.			
EUROPE—				Possessions ..	16	7	23
England ..	4,901	3,482	8,383	Other African			
Wales ..	208	125	333	Countries ..	2	2	4
Scotland ..	1,328	948	2,276				
Ireland ..	2,067	2,072	4,139	AMERICA—			
Isle of Man ..	8	1	9	Canada ..	46	18	64
Other European				Other American			
Brit. Possessions	33	8	41	Brit. Possessions	5	4	9
Austria-Hungary	38	8	46	United States of			
Denmark ..	139	34	173	America ..	58	26	84
France.. ..	56	22	78	Other American			
Germany ..	447	241	688	Countries ..	21	7	28
Greece ..	26	3	29				
Italy ..	92	12	104	POLYNESIA—			
Norway ..	79	6	85	Polynesian Brit.			
Russia ..	96	25	121	Possessions ..	16	5	21
Sweden ..	100	10	110	South Sea Islands	37	6	43
Switzerland ..	28	9	37				
Other European				At Sea	63	51	114
Countries ..	32	8	40				
ASIA—				Unspecified ..	615	142	757
British India ..	88	29	117				
Other Asiatic Brit.				Total Deaths ..	29,245	22,066	51,311
Possessions ..	13	4	17				

12. Occupations of Males who Died in 1922.—(i) *Australia, 1922.* Information as to the occupations of the 29,245 males who died in Australia in 1922 is contained in the following statement :—

OCCUPATIONS OF MALES WHO DIED IN 1922.—AUSTRALIA.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.		CLASS III.—COMMERCIAL— <i>cont.</i>	
General Government	163	Leather, raw materials	1
Local Government	30	Wool and tallow	12
Defence	167	Hay, corn, etc.	8
Law and order	193	Other vegetable matter	20
Religion	86	Wood and coal	28
Health	207	Stone, clay, glass	1
Literature	48	Ironmongery	20
Science	16	Merchants	141
Civil and mechanical engineering, architecture and surveying ..	82	Shopkeepers and assistants ..	210
Education	140	Dealers and hawkers	151
Fine arts	31	Agents and brokers	136
Music	42	Clerks, bookkeepers, etc. ..	640
Amusements	112	Commercial travellers and salesmen	271
Total Professional	1,317	Others engaged in commercial pursuits	180
		Speculators on chance events ..	23
		Total Commercial	2,871
CLASS II.—DOMESTIC.		CLASS IV.—TRANSPORT AND COMMUNICATION.	
Hotelkeepers and assistants ..	465	Railway traffic	519
Others engaged in providing board and lodging	13	Tramway traffic	64
Coachmen and grooms	40	Road traffic	610
Hairdressers	70	Sea and river traffic	501
Laundrymen	19	Postal service	80
Others engaged in domestic occupations	138	Telegraph and telephone service	48
Total Domestic	745	Messengers, etc.	18
		Aviation	2
CLASS III.—COMMERCIAL.		Total Transport and Communication	1,842
Banking and finance	97	CLASS V.—INDUSTRIAL.	
Insurance and valuation	85	Books and publications	163
Land and household property ..	48	Musical instruments	14
Books, publications and advertising	36	Prints, pictures and art materials	7
Musical instruments	1	Ornaments and small wares ..	21
Prints, pictures, and art materials	1	Designs, medals, type and dies ..	2
Ornaments and small wares	1	Watches and clocks	31
Watches, clocks, jewellery	1	Arms and ammunition	6
Machines, tools and implements	1	Engines, machines, tools, etc. ..	119
Carriages and vehicles	1	Carriages and vehicles	143
Harness and saddlery	1	Harness, saddlery and leatherware	81
Ships and boats	2	Ships, boats and equipment	43
Building materials	10	Furniture	104
Furniture	6	Building materials	105
Chemicals and by-products	2	Chemicals and by-products	5
Paper and stationery	7	Textile fabrics	49
Textile fabrics	76	Dress	348
Dress	32	Fibrous materials	9
Fibrous materials	5	Animal food	19
Animal food	318	Vegetable food	171
Vegetable food	80		
Groceries and stimulants	184		
Living animals	34		

OCCUPATIONS OF MALES WHO DIED IN 1922.—AUSTRALIA—*continued.*

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS V.—INDUSTRIAL— <i>cont.</i>		CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Groceries and stimulants ..	73	Agricultural	3,281
Animal matter	40	Pastoral	807
Workers in wood not elsewhere classed	15	Dairy farming	39
Paper	4	Bees, fisheries and wild animals ..	112
Stone, clay, glass	72	Forestry	120
Jewellery and precious stones ..	41	Water conservation and supply ..	13
Metals, other than gold and silver ..	457	Mines and quarries	1,292
Gas, electric lighting, etc. ..	73		
Building—		Total Primary Producers ..	5,664
Builders	135		
Stonemasons	81	CLASS VII.—INDEFINITE.	
Bricklayers	92	Independent means, having no specific occupation	532
Slaters	3	Occupation unspecified	846
Carpenters	463		
Plasterers	62	Total Indefinite	1,378
Painters and glaziers ..	207		
Plumbers	95	CLASS VIII.—DEPENDENTS.	
Signwriters	9	Dependent relatives (including persons under 20 years of age with no specified occupation) ..	6,783
Roads, railways and earthworks ..	54	Supported by voluntary and State contributions	53
Disposal of the dead	9		
Disposal of refuse	27	Total Dependents	6,836
Other industrial workers—			
Manufacturers	80	Total Male Deaths	29,245
Engineers, firemen	452		
Contractors	254		
Labourers, undefined	4,332		
Others	22		
Total Industrial	8,592		

(ii) *Australia, 1918 to 1922.* The male deaths in Australia grouped according to the main classes of occupations, and the percentage of each class on the total male deaths for the five years 1918 to 1922, are shown in the table hereunder :—

OCCUPATIONS OF MALES WHO DIED IN AUSTRALIA, 1918 TO 1922.

Occupation.		1918.	1919.	1920.	1921.	1922.
Class						
I. Professional	{ Total	1,485	1,944	1,391	1,307	1,317
	{ Per cent.	5.20	5.17	4.34	4.26	4.50
II. Domestic	{ Total	731	1,059	739	830	745
	{ Per cent.	2.56	2.81	2.30	2.71	2.55
III. Commercial	{ Total	2,451	3,694	2,814	2,739	2,871
	{ Per cent.	8.57	9.82	8.78	8.94	9.82
IV. Transport and communication	{ Total	1,778	2,706	1,910	1,841	1,842
	{ Per cent.	6.22	7.19	5.96	6.01	6.30
V. Industrial	{ Total	7,952	11,397	8,849	8,613	8,592
	{ Per cent.	27.82	30.29	27.61	28.10	29.38
VI. Agricultural, Pastoral, Mining, etc.	{ Total	5,764	6,966	5,786	5,711	5,664
	{ Per cent.	20.16	18.51	18.05	18.63	19.37
VII. Indefinite	{ Total	1,090	1,529	1,595	1,436	1,378
	{ Per cent.	3.81	4.06	4.98	4.68	4.71
VIII. Dependents	{ Total	7,334	8,337	8,969	8,175	6,836
	{ Per cent.	25.66	22.15	27.98	26.67	23.37
Total		28,585	37,632	32,053	30,652	29,245

13. **Index of Mortality.**—(i) *For Year 1922.* The death rates—those for age-groups on page 993 excepted—so far quoted are crude rates, *i.e.*, they simply show the number of deaths per thousand of mean population, without taking the age constitution into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related; thus, other conditions being equal, the death rate of a country will be lower if it contains a large percentage of young people (not infants). In order to obtain a comparison of the mortality of various countries on a uniform basis so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which the “Index of Mortality,” as distinguished from the crude death rate, should be ascertained. The calculation for 1922 is shown below for each of the States and Territories and for Australia, the distribution of the mean population of 1922 into age-groups being in accordance with the distribution as found at the Census of 1921 :—

INDEX OF MORTALITY, 1922.

Age-Group.	Mean Population, 1922, distributed according to Results of Census of 1921.	Number of Deaths, 1922.	No. of Deaths per 1,000 of Mean Population, 1922, in each Age-Group.	Age Distribution per 1,000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	54,513	2,960	54.30	25.5	1.39
1 year and under 20	820,651	1,913	2.33	398.0	0.93
20 years „ 40	703,990	2,452	3.48	269.6	0.94
40 „ „ 60	413,458	3,875	9.37	192.3	1.80
60 „ and upwards.. ..	155,982	7,966	51.07	114.6	5.85
Total	2,148,594	19,166	8.92	1,000.0	10.91
VICTORIA.					
Under 1 year	35,792	1,937	54.12	25.5	1.38
1 year and under 20	567,057	1,229	2.17	398.0	0.86
20 years „ 40	502,859	1,777	3.53	269.6	0.95
40 „ „ 60	335,125	3,204	9.56	192.3	1.84
60 „ and upwards.. ..	130,268	7,008	53.80	114.6	6.17
Total	1,571,101	15,155	9.65	1,000.0	11.20
QUEENSLAND.					
Under 1 year	21,029	1,010	48.03	25.5	1.22
1 year and under 20	308,314	892	2.89	398.0	1.15
20 years „ 40	256,166	1,016	3.97	269.6	1.07
40 „ „ 60	144,332	1,468	10.17	192.3	1.96
60 „ and upwards.. ..	53,049	2,766	52.14	114.6	5.98
Total	782,890	7,152	9.14	1,000.0	11.38
SOUTH AUSTRALIA.					
Under 1 year	12,007	570	47.47	25.5	1.21
1 year and under 20	190,738	460	2.41	398.0	0.96
20 years „ 40	164,514	591	3.59	269.6	0.97
40 „ „ 60	96,893	887	9.15	192.3	1.76
60 „ and upwards.. ..	42,088	2,100	49.90	114.6	5.72
Total	506,240	4,608	9.10	1,000.0	10.62

INDEX OF MORTALITY, 1922—*continued.*

Age-Group.	Mean Population, 1922, distributed according to Results of Census of 1921.	Number of Deaths, 1922.	No. of Deaths per 1,000 of Mean Population, 1922, in each Age-Group.	Age Distribution per 1,000 of Standard Population.	Index of Mortality.
WESTERN AUSTRALIA.					
Under 1 year	7,952	453	56.97	25.5	1.45
1 year and under 20	132,904	339	2.55	398.0	1.01
20 years " 40	100,113	430	4.30	269.6	1.16
40 " " 60	78,278	890	11.37	192.3	2.19
60 " " and upwards..	20,177	1,055	52.29	114.6	5.99
Total	339,424	3,167	9.33	1,000.0	11.80
TASMANIA.					
Under 1 year	5,669	324	57.15	25.5	1.46
1 year and under 20	88,359	231	2.61	398.0	1.04
20 years " 40	64,273	281	4.37	269.6	1.18
40 " " 60	39,544	331	8.37	192.3	1.61
60 " " and upwards..	17,029	830	48.74	114.6	5.59
Total	214,874	1,997	9.29	1,000.0	10.88
NORTHERN TERRITORY.					
Under 1 year	77	4	51.95	25.5	1.32
1 year and under 20	905	1	1.11	398.0	0.44
20 years " 40	1,194	10	8.38	269.6	2.26
40 " " 60	1,061	26	24.51	192.3	4.71
60 " " and upwards..	419	19	45.35	114.6	5.20
Total	3,656	60	16.41	1,000.0	13.93
FEDERAL CAPITAL TERRITORY.					
Under 1 year	68	1	14.71	25.5	0.38
1 year and under 20	1,150	2	1.74	398.0	0.69
20 years " 40	976	1	1.02	269.6	0.27
40 " " 60	474	..	..	192.3	..
60 " " and upwards..	146	2	13.70	114.6	1.57
Total	2,814	6	2.13	1,000.0	2.91
AUSTRALIA.					
Under 1 year	137,107	7,259	52.94	25.5	1.35
1 year and under 20	2,110,078	5,067	2.40	398.0	0.96
20 years " 40	1,794,085	6,558	3.66	269.6	0.99
40 " " 60	1,109,165	10,681	9.63	192.3	1.85
60 " " and upwards..	419,158	21,746	51.88	114.6	5.95
Total	5,569,593	51,311	9.21	1,000.0	11.10

NOTE.—The small number of persons whose ages were not ascertained at the 1921 Census has been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the persons who died in 1922, and those whose ages were not stated in the certificate of death.

Among the States Western Australia had the highest index and Victoria the highest crude rate, while South Australia had the lowest index and New South Wales the lowest crude rate. The range of the indexes was above that of the crude rates, the latter varying from 8.92 per thousand in New South Wales to 9.65 per thousand in Victoria,

a range of 0.73 per thousand, while the index varied from 10.62 per thousand in South Australia to 11.80 per thousand in Western Australia, a range of 1.18 per thousand.

(ii) *Years 1918 to 1922.* For purposes of comparison with previous years the index of mortality is shown in the following table for each of the five years 1918 to 1922 :—

INDEX OF MORTALITY, 1918 TO 1922.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Capital Territory.	Australia.
1918 ..	12.86	13.23	13.94	12.53	13.69	11.70	15.40	2.37	13.07
1919 ..	16.48	15.51	15.97	14.59	15.50	13.29	17.42	8.76	15.75
1920 ..	13.32	13.72	14.36	13.49	15.63	12.28	18.27	3.20	13.65
1921 ..	12.27	12.85	12.30	12.47	15.60	13.16	22.38	2.15	12.66
1922 ..	10.91	11.20	11.38	10.62	11.80	10.88	13.93	2.91	11.10

14. Causes of Death.—(i) *General.* The classification adopted by the Commonwealth Bureau of Census and Statistics is that of the International Institute of Statistics, as amended by the Committees of Revision which met in 1909 and 1920. The detailed classification groups causes of death under 205 different headings in fifteen categories, as follows :—

- | | |
|---|--|
| <ul style="list-style-type: none"> i. Epidemic, Endemic, and Infectious Diseases. ii. General Diseases not included in (i). iii. Diseases of the Nervous System and Organs of Sense. iv. Diseases of the Circulatory System. v. Diseases of the Respiratory System. vi. Diseases of the Digestive System. vii. Diseases of the Genito-urinary System and Adnexa. | <ul style="list-style-type: none"> viii. Puerperal Condition. ix. Diseases of the Skin and Cellular Tissue. x. Diseases of the Organs of Locomotion. xi. Malformations. xii. Early Infancy. xiii. Old Age. xiv. External Causes. xv. Ill-defined Diseases. |
|---|--|

(ii) *Compilation of Vital Statistics for 1907 and Subsequent Years in Commonwealth Bureau.* The vital statistics of Australia from the year 1907 onward have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in all the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iii) *Classification of Causes of Death, 1918 to 1922, according to Abridged International Classification.* An abridged classification which enumerates thirty-eight diseases and groups of diseases according to the revised classification, is in use in many European and American States, while the Australian statistics have been compiled on the detailed classification. A table has been prepared showing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for the years 1918 to 1922 will be found in full in Bulletins Nos. 36 to 40 of "Australian Demography"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1922.

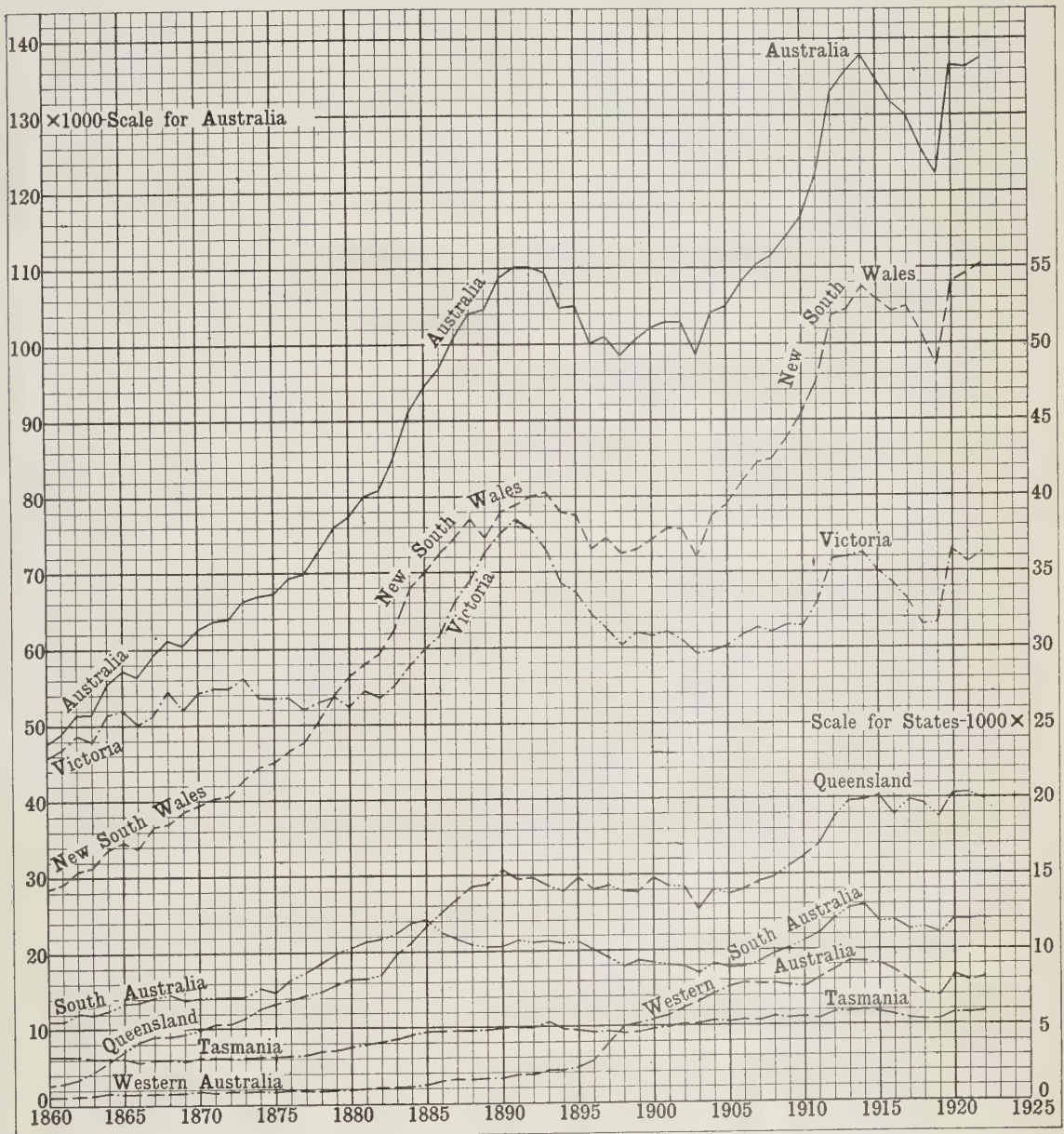
CAUSES OF DEATH.—MALES, 1922.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus- tralia.
1 Typhoid Fever ..	62	17	26	11	14	8	..	..	138
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	..	2	5	..	7	..	5	..	19
4 Small-pox ..	..	..	2	..	..	..	..	..	2
5 Measles ..	4	1	3	3	1	..	..	..	12
6 Scarlatina ..	6	7	2	1	1	3	..	..	20
7 Whooping Cough ..	36	21	19	..	5	3	..	..	84
8 Diphtheria and Croup	110	70	35	27	10	32	..	..	284
9 Influenza ..	50	19	15	1	8	2	..	..	95
9A Pneumonic Influenza ..	38	15	33	5	6	2	..	..	99
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	..	..	..	..	..	..
12 Other Epidemic Diseases	41	26	36	15	8	5	..	..	131
13 Tuberculosis of the Lungs	653	489	212	172	177	61	11	..	1,775
14 Tuberculosis of the Men- inges ..	27	32	1	10	10	8	..	..	88
15 Other forms of Tuber- culosis ..	55	48	11	13	11	12	..	..	150
16 Cancer and other Malig- nant Tumours ..	950	791	380	248	175	94	1	..	2,639
17 Meningitis ..	130	76	47	18	17	20	..	..	308
18 Congestion, Hæmorrhage and Softening of Brain	536	377	193	151	83	40	1	..	1,381
19 Organic Diseases of the Heart ..	1,068	840	390	278	172	121	3	2	2,874
20 Acute Bronchitis ..	58	25	21	21	4	..	1	..	130
21 Chronic Bronchitis ..	139	139	63	34	28	12	..	..	415
22 Pneumonia ..	527	394	172	96	111	62	..	1	1,363
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.)	452	479	209	89	114	45	3	..	1,391
24 Diseases of the Stomach (Cancer excepted) ..	102	87	57	16	15	9	..	..	286
25 Diarrhœa and Enteritis (children under 2 years only) ..	405	266	158	82	88	31	..	..	1,030
26 Appendicitis & Typhlitis	104	59	47	12	13	12	1	..	248
27 Hernia, Intestinal Ob- struction ..	125	97	45	23	14	14	..	..	318
28 Cirrhosis of the Liver..	91	48	30	23	8	7	..	..	207
29 Nephritis and Bright's Disease ..	503	447	216	110	50	28	..	..	1,354
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	..	..	..	..	..	..	..	..	..
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	..	..	..	..	..	..	..	..	..
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	..	..	..	..	..	..	..	..	..
33 Congenital Debility and Malformations ..	820	554	307	174	117	95	1	1	2,069
34 Senile Debility ..	865	601	305	196	128	85	8	..	2,188
35 Violence ..	757	516	343	159	166	66	9	..	2,016
36 Suicide ..	163	106	76	32	52	11	..	1	441
37 Other Diseases ..	1,980	1,438	871	465	338	181	3	..	5,276
38 Unspecified or Ill-defined Diseases ..	157	100	42	52	43	15	5	..	414
Total—Males ..	11,014	8,187	4,372	2,537	1,994	1,084	52	5	29,245

CAUSES OF DEATH.—FEMALES, 1922.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus-tralia.
1 Typhoid Fever ..	35	13	14	8	12	7	..	..	89
2 Typhus ..	..	..	..	..	..	..	..	..	..
3 Malaria ..	..	..	1	..	..	..	1	..	2
4 Small-pox ..	..	..	..	..	..	..	..	..	..
5 Measles ..	7	1	6	1	1	..	..	..	16
6 Scarletina ..	4	7	1	2	..	4	..	..	18
7 Whooping Cough ..	43	23	21	2	6	3	..	..	98
8 Diphtheria and Croup	95	67	25	34	12	26	..	..	259
9 Influenza ..	34	15	12	1	4	1	..	..	67
9A Pneumonic Influenza	46	14	24	..	4	6	..	..	94
10 Asiatic Cholera ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras ..	..	..	..	1	..	..	..	..	1
12 Other Epidemic Diseases	40	30	22	12	4	3	2	..	113
13 Tuberculosis of the Lungs	400	422	92	151	74	42	1	..	1,182
14 Tuberculosis of the Meninges ..	27	34	2	14	2	9	..	..	88
15 Other forms of Tuberculosis ..	31	43	7	14	6	13	..	..	114
16 Cancer and other Malignant Tumours ..	896	776	289	234	126	92	..	..	2,413
17 Meningitis ..	75	48	51	21	7	8	..	..	210
18 Congestion, Hæmorrhage and Softening of Brain	499	508	136	165	84	60	..	..	1,452
19 Organic Diseases of the Heart ..	852	739	269	233	94	97	..	..	2,284
20 Acute Bronchitis ..	71	42	21	12	..	6	1	..	153
21 Chronic Bronchitis ..	137	128	48	38	11	19	..	..	381
22 Pneumonia ..	286	248	104	66	50	34	..	..	788
23 Other Diseases of the Respiratory System (Tuberculosis exceptd.)	311	293	102	58	31	22	..	..	817
24 Diseases of the Stomach (Cancer excepted) ..	56	55	33	14	13	10	..	..	181
25 Diarrhœa and Enteritis (children under 2 years only) ..	288	178	120	45	70	12	..	..	713
26 Appendicitis & Typhlitis	66	43	22	10	9	4	..	..	154
27 Hernia, Intestinal Obstruction ..	82	76	30	19	5	15	..	..	227
28 Cirrhosis of the Liver..	54	36	14	8	2	2	..	..	116
29 Nephritis and Bright's Disease ..	343	351	165	66	33	21	..	..	979
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	62	54	20	19	6	8	..	..	169
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	97	39	23	11	11	15	..	..	196
32 Other Puerperal Accidents of Pregnancy and Confinement ..	158	97	80	39	32	18	1	..	425
33 Congenital Debility and Malformations ..	572	386	180	134	107	73	..	..	1,452
34 Senile Debility ..	605	707	186	205	72	80	..	1	1,856
35 Violence ..	228	159	89	40	42	16	..	..	574
36 Suicide ..	40	24	16	6	3	3	..	..	92
37 Other Diseases ..	1,532	1,224	533	351	226	175	1	..	4,042
38 Unspecified or Ill-defined Diseases ..	80	88	22	37	14	9	1	..	251
Total—Females ..	8,152	6,968	2,780	2,071	1,173	913	8	1	22,066

BIRTHS—1860 TO 1922.

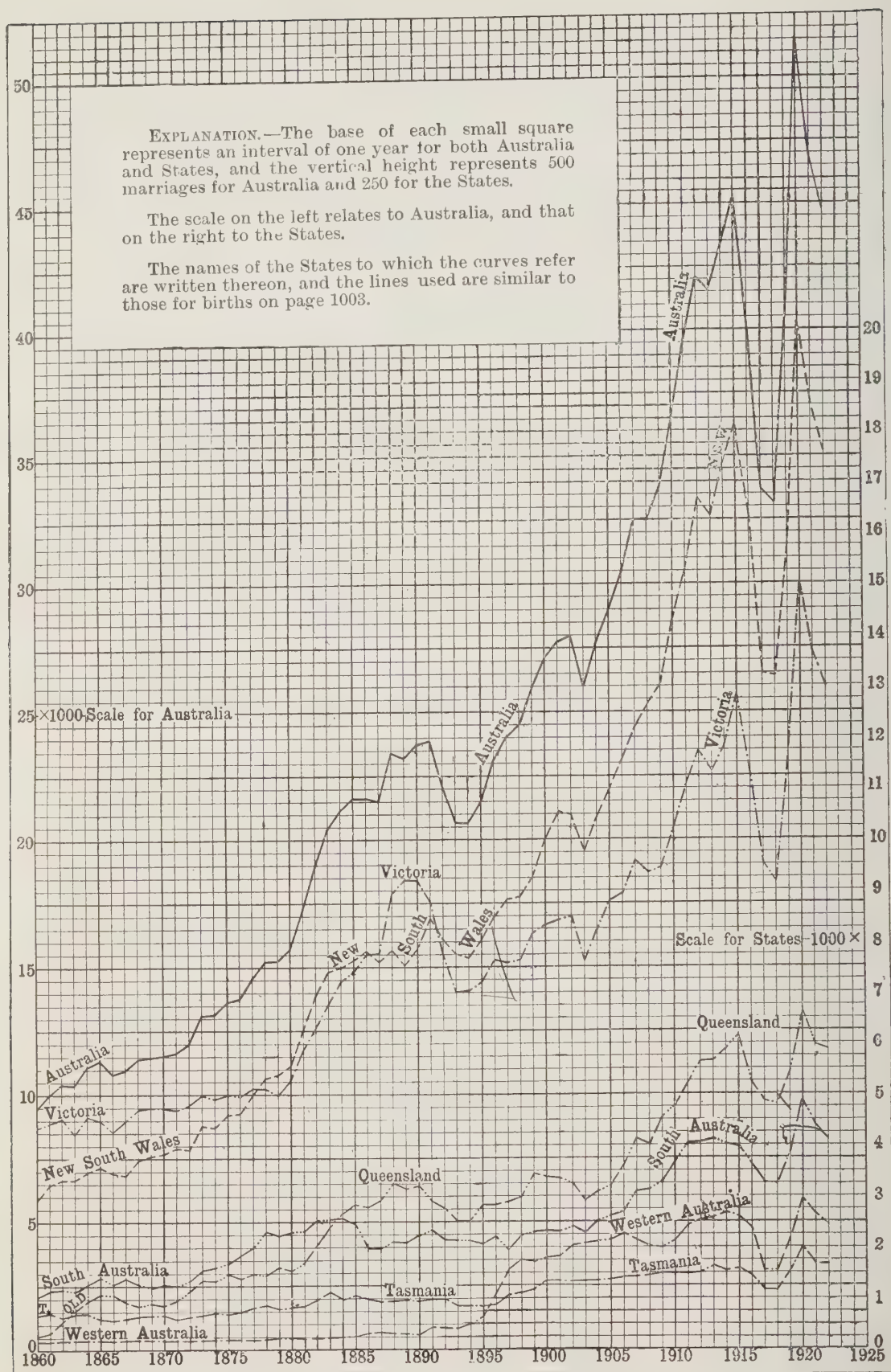


EXPLANATION.—The base of each small square represents an interval of one year for both Australia and States, and the vertical height represents 2,000 persons for Australia and 1,000 for the States.

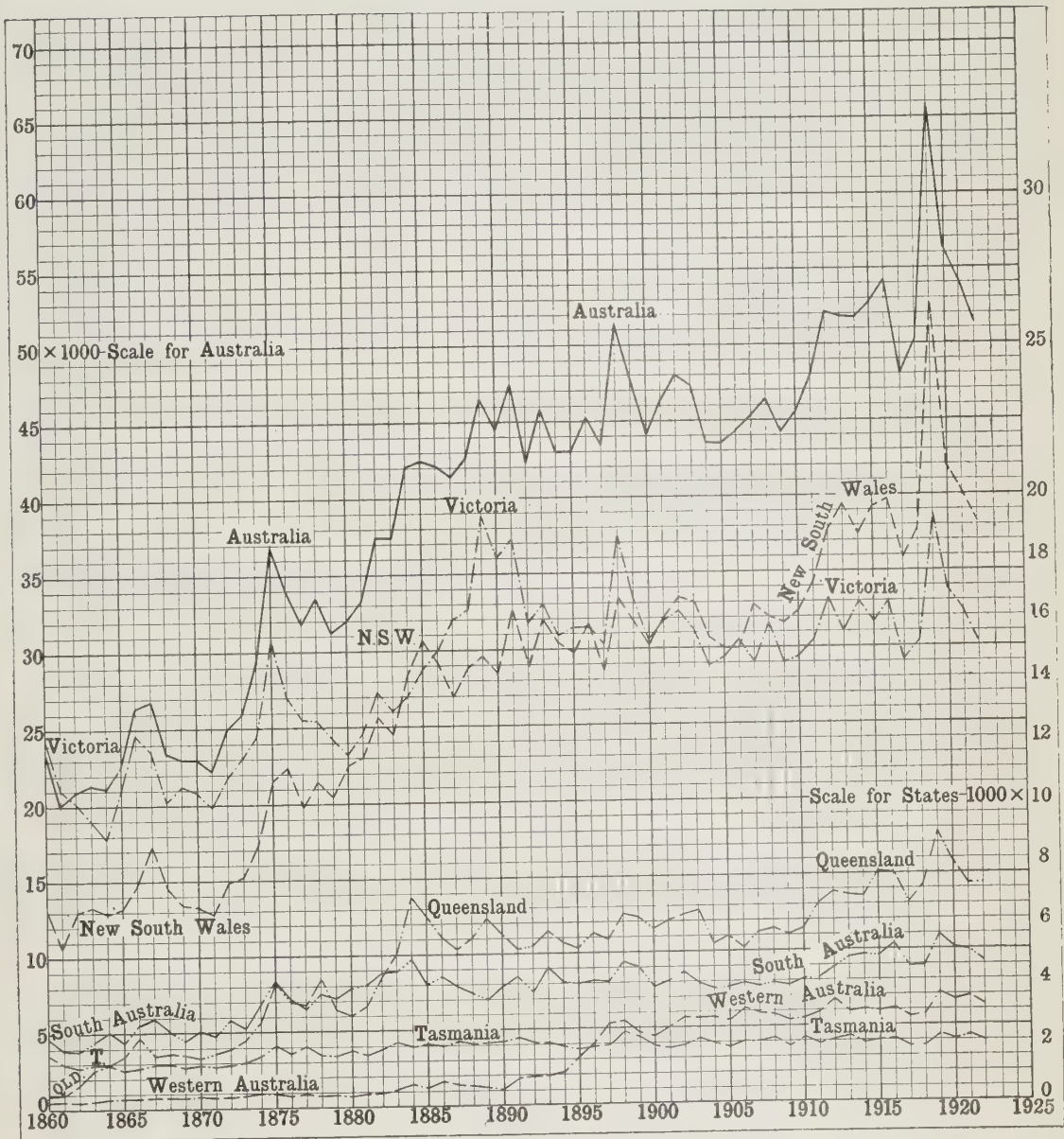
The scale on the left relates to Australia and that on the right to the States.

The names of the States to which the curves refer are written thereon, and the characters of the lines used are as follows:—Australia, —————; New South Wales, ————; Victoria, ————; Queensland, ————; South Australia, ————; Western Australia, ————; Tasmania, ————.

MARRIAGES—1860 TO 1922.



DEATHS—1860 TO 1922.

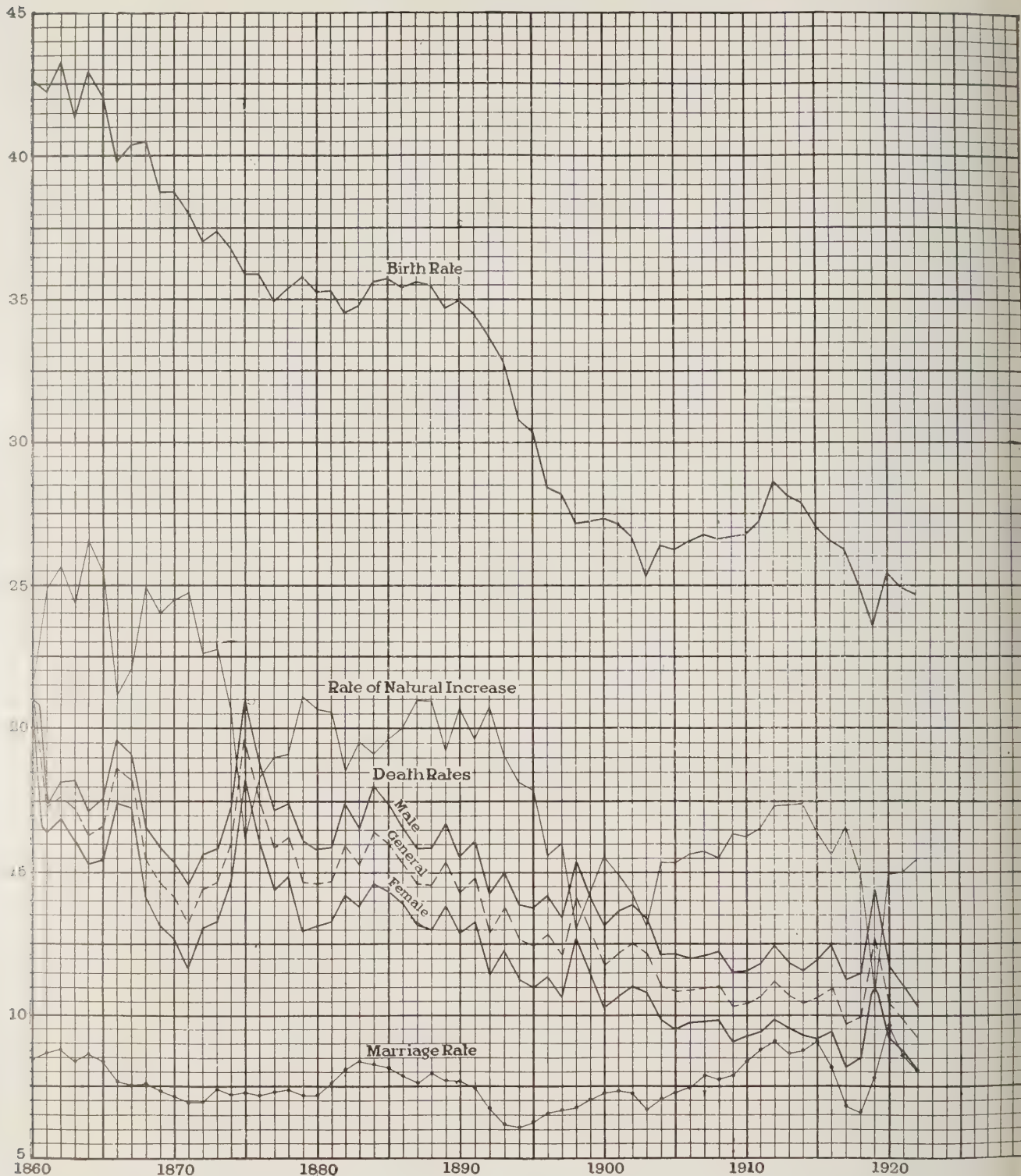


EXPLANATION.—The base of each small square represents an interval of one year for both Australia and States, and the vertical height represents 1,000 persons for Australia and 500 for the States.

The scale on the left relates to Australia, and that on the right to the States.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 1003.

GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE) AND MARRIAGE RATES—AUSTRALIA, 1860 TO 1922.



EXPLANATION.—The base of each small square represents one year's interval, and the vertical height one half per thousand of the population—the basic line being five per thousand of the population.

STATE BIRTH-RATE GRAPHS. (See next page.)

EXPLANATION.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

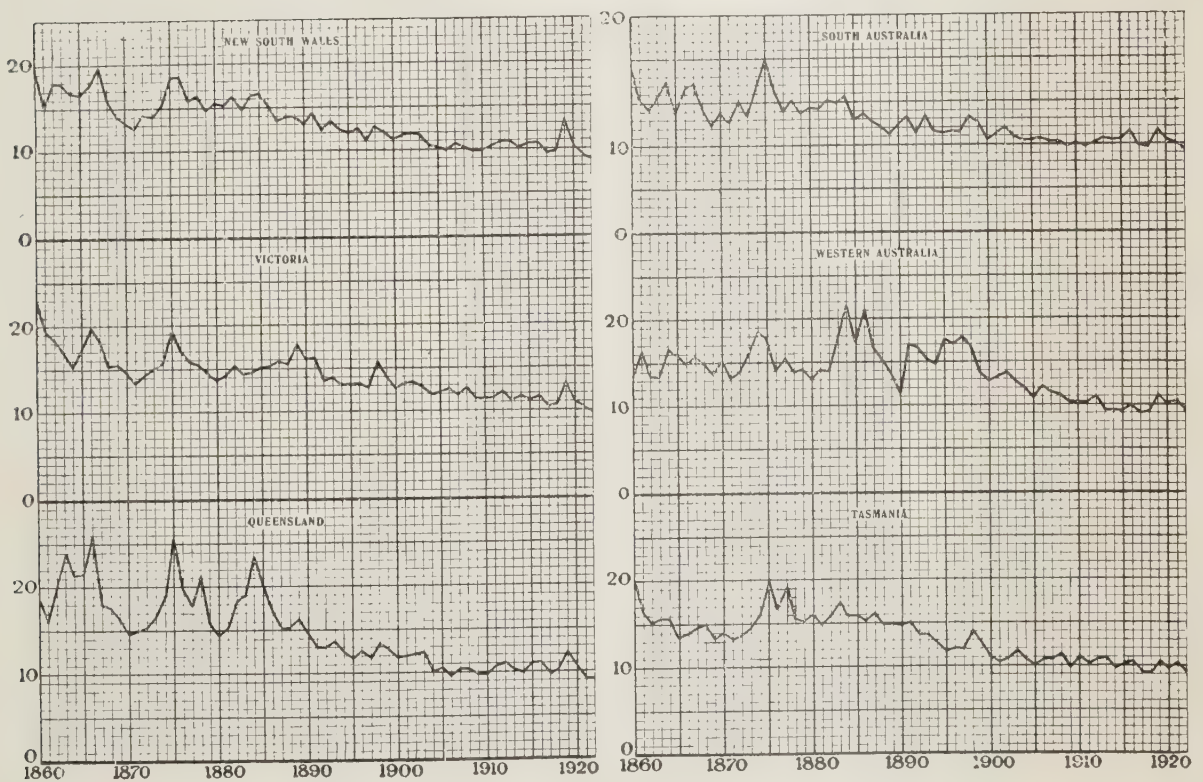
STATE DEATH-RATE GRAPHS. (See next page.)

EXPLANATION.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shown by a thickened line.

BIRTH RATES—STATES, 1860 TO 1922.



DEATH RATES—STATES, 1860-1922.



For explanation of above graphs see page 1006.

CAUSES OF DEATH.—PERSONS, 1922.

Cause.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus- tralia.
1 Typhoid Fever ..	97	30	40	19	26	15	..	..	227
2 Typhus .. ..	..	..	..	..	..	..	..	..	..
3 Malaria .. ..	..	2	6	..	7	..	6	..	21
4 Small-pox .. ..	..	..	2	..	..	..	..	..	2
5 Measles	11	2	9	4	2	..	..	..	28
6 Scarlatina	10	14	3	3	1	7	..	..	38
7 Whooping Cough ..	79	44	40	2	11	6	..	..	182
8 Diphtheria and Croup	205	137	60	61	22	58	..	..	543
9 Influenza	84	34	27	2	12	3	..	..	162
9A Pneumonic Influenza ..	84	29	57	5	10	8	..	..	193
10 Asiatic Cholera .. ..	..	..	..	..	..	..	..	..	..
11 Cholera Nostras .. ..	..	..	..	1	..	..	..	..	1
12 Other Epidemic Diseases	81	56	58	27	12	8	2	..	244
13 Tuberculosis of the Lungs	1,053	911	304	323	251	103	12	..	2,957
14 Tuberculosis of the Men- inges	54	66	3	24	12	17	..	..	176
15 Other forms of Tuber- culosis	86	91	18	27	17	25	..	..	264
16 Cancer and other Malig- nant Tumours	1,846	1,567	669	482	301	186	1	..	5,052
17 Meningitis	205	124	98	39	24	28	..	..	518
18 Congestion, Hæmorrhage and Softening of Brain	1,035	885	329	316	167	100	1	..	2,833
19 Organic Diseases of the Heart	1,920	1,579	659	511	266	218	3	2	5,158
20 Acute Bronchitis	129	67	42	33	4	6	2	..	283
21 Chronic Bronchitis	276	267	111	72	39	31	..	..	796
22 Pneumonia	813	642	276	162	161	96	..	1	2,151
23 Other Diseases of the Respiratory System (Tuberculosis excptd.)	763	772	311	147	145	67	3	..	2,208
24 Diseases of the Stomach (Cancer excepted) ..	158	142	90	30	28	19	..	..	467
25 Diarrhœa and Enteritis (children under 2 years only)	693	444	278	127	158	43	..	..	1,743
26 Appendicitis & Typhlitis	170	102	69	22	22	16	1	..	402
27 Hernia, Intestinal Ob- struction	207	173	75	42	19	29	..	..	545
28 Cirrhosis of the Liver..	145	84	44	31	10	9	..	..	323
29 Nephritis and Bright's Disease	846	798	381	176	83	49	..	..	2,333
30 Non-cancerous Tumours and other Diseases of Female Genital Organs	62	54	20	19	6	8	..	..	169
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	97	39	23	11	11	15	..	..	196
32 Other Puerperal Acci- dents of Pregnancy and Confinement ..	158	97	80	39	32	18	1	..	425
33 Congenital Debility and Malformation	1,392	940	487	308	224	168	1	1	3,521
34 Senile Debility	1,470	1,308	491	401	200	165	8	1	4,044
35 Violence	985	675	432	199	208	82	9	..	2,590
36 Suicide	203	130	92	38	55	14	..	1	533
37 Other Diseases	3,512	2,662	1,404	816	564	356	4	..	9,318
38 Unspecified or Ill-defined Diseases	237	188	64	89	57	24	6	..	665
Total—Persons	19,166	15,155	7,152	4,608	3,167	1,997	60	6	51,311

The classification for the years 1918 to 1922 is shown for Australia in the following table, and for purposes of comparison the figures for the year 1922 have been repeated from the preceding table. Male and female deaths for 1918 are shown on pages 197 and 198 of the twelfth issue, for 1919 on pages 188 and 189 of the thirteenth issue, for 1920 on pages 129 and 130 of the fourteenth issue, and for 1921 on pages 122 and 123 of the fifteenth issue of this book.

CAUSES OF DEATH.—AUSTRALIA, 1918 TO 1922.

PERSONS.

Cause.	1918.	1919.	1920.	1921.	1922.
1 Typhoid Fever	251	272	312	352	227
2 Typhus .. .. .	..	..	..	..	..
3 Malaria	41	34	19	43	21
4 Small-pox .. .. .	..	..	..	2	2
5 Measles	82	51	482	83	28
6 Scarlatina	81	69	90	42	38
7 Whooping Cough	234	211	561	428	182
8 Diphtheria and Croup	645	581	829	917	543
9 Influenza	848	1,289	230	308	162
9A Pneumonic Influenza .. .. .	..	10,263	218	346	193
10 Asiatic Cholera .. .. .	..	..	..	..	..
11 Cholera Nostras	2	1	1	2	1
12 Other Epidemic Diseases	174	157	124	232	244
13 Tuberculosis of the Lungs	3,035	3,479	3,098	3,205	2,957
14 Tuberculosis of the Meninges	208	188	214	218	176
15 Other forms of Tuberculosis	292	281	295	264	264
16 Cancer and other Malignant Tumours	4,246	4,421	4,511	4,768	5,052
17 Meningitis	583	481	596	558	518
18 Congestion, Hæmorrhage and Softening of the Brain	2,297	2,467	2,495	2,472	2,833
19 Organic Diseases of the Heart	3,976	5,864	5,370	5,166	5,158
20 Acute Bronchitis	399	420	398	386	283
21 Chronic Bronchitis	1,121	1,047	962	816	796
22 Pneumonia	2,141	2,656	2,099	2,066	2,151
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	2,199	2,413	2,527	2,304	2,208
24 Diseases of the Stomach (Cancer excepted)	409	478	443	439	467
25 Diarrhœa and Enteritis (Children under two years only)	1,732	2,520	3,067	2,589	1,743
26 Appendicitis and Typhlitis	371	352	382	351	402
27 Hernia, Intestinal Obstruction	543	530	541	480	545
28 Cirrhosis of the Liver	297	315	340	323	323
29 Nephritis and Bright's Disease	2,144	2,221	2,286	2,139	2,333
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	159	132	154	166	169
31 Puerperal Septicæmia (Puerperal Fever, Peritonitis, Phlebitis)	183	166	250	208	196
32 Other Puerperal Accidents of Pregnancy and Confinement	409	404	433	435	425
33 Congenital Debility, etc.	3,454	3,885	4,046	3,758	3,521
34 Senile Debility	4,664	4,840	4,636	3,981	4,044
35 Violence	2,641	2,799	2,791	2,892	2,590
36 Suicide	498	546	636	621	533
37 Other Diseases	9,226	9,390	10,048	9,995	9,318
38 Unspecified or Ill-defined Diseases	664	707	805	721	665
Total	50,249	65,930	56,289	54,076	51,311

15. **Certification of Deaths.**—Information was obtained in 1922 as to the persons by whom the 51,311 deaths which occurred in Australia were certified. Approximately 90.3 were certified by medical practitioners, 9.5 by coroners after inquests or magisterial inquiries, while in 0.2 per cent. of the cases no certificate was given or particulars were not available. The percentages for 1921 were 89.4, 10.3, and 0.3 respectively.

The results are given in detail in Bulletin No. 40 of "Australian Demography"; a summary thereof is supplied in the table hereunder :—

CERTIFICATION OF DEATHS, 1922.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Fed. Cap. Ter.	Aus- tralia.
Medical practitioner	17,275	13,368	6,784	4,182	2,819	1,868	18	5	46,319
Coroner ..	1,882	1,787	303	426	319	129	26	1	4,873
Not certified or not stated ..	9	..	65	..	29	..	16	..	119
Total Deaths	19,166	15,155	7,152	4,608	3,167	1,997	60	6	51,311

Of the cases certified by coroners, violent deaths numbered 2,473, senile decay 335, organic heart disease 417, ill-defined causes 337, congenital debility 52, cerebral hæmorrhage and apoplexy 115, pneumonia 92, Bright's disease 89, diarrhoea and enteritis 65, pulmonary tuberculosis 73, and broncho-pneumonia 70.

Of uncertified causes of death, senile debility numbered 30, ill-defined causes 20, and violent deaths 15.

16. Deaths from Special Causes.—The table on p. 1010 furnishes comparisons for the last five years only, and comparisons will, therefore, generally be restricted to that period.

(i) *Typhoid Fever.* The number of deaths from typhoid fever in 1922 was 227, which was equivalent to 4 per hundred thousand living. This rate was lower than those for 1918 to 1921. In 1922 the rate varied from 8 per hundred thousand persons living in Western Australia to 2 in Victoria.

(ii) *Typhus.* No deaths from typhus have been registered from 1918 to 1922.

(iii) *Malaria.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 6 out of 21 deaths registered in 1922 having occurred in Queensland, 7 in Western Australia, and 6 in the Northern Territory.

(iv) *Small-pox.* The number of deaths from small-pox in Australia is very small, four deaths only resulting in the five years under review.

(v) *Measles.* Though no serious epidemic of measles has occurred, the deaths vary considerably from year to year. The greatest number occurred during 1920, when 482 were registered, while the minimum was reached in 1922 with a total of 28 deaths. During 1922 there were 12 male and 16 female deaths from measles, of which 11 were registered in New South Wales and 9 in Queensland.

(vi) *Scarlatina.* The mortality from this source is very light, the average of deaths from 1918 to 1922 being 64 per annum.

(vii) *Whooping Cough.* In 1920 the number of deaths was 561, the highest number registered in the period 1918 to 1922. In 1922 there were 182 deaths, equal to a death rate of 3 per 100,000 persons. Seventy-nine deaths occurred in New South Wales, 44 in Victoria, 40 in Queensland, 2 in South Australia, 11 in Western Australia, and 6 in Tasmania.

(viii) *Diphtheria and Croup.* The number of deaths due to diphtheria and croup has varied from a minimum of 543 in 1922 to a maximum of 917 in 1921. Of the 543 registered in 1922, 522 were attributed to diphtheria, which gives a death rate of 9 per 100,000 of population. The corresponding rates for the separate States ranged from 6 per 100,000 in Western Australia to 26 in Tasmania.

(ix) *Influenza.* In 1918 there was rather a serious outbreak of influenza, the deaths numbering 848, while the full effect of the world-wide epidemic was experienced in 1919, the number of deaths in Australia reaching 11,552, of which almost exactly one-half

occurred in New South Wales. The deaths in States were as follows:—Ordinary influenza—New South Wales, 568; Victoria, 345; Queensland, 247; South Australia, 47; Western Australia, 42; Tasmania, 29; and Northern Territory, 11; total, 1,289. Pneumonic influenza—New South Wales, 5,215; Victoria, 3,110; Queensland, 799; South Australia, 471; Western Australia, 470; Tasmania, 196; Northern Territory, 1; and Federal Capital Territory, 1; total, 10,263.

During 1922, 162 deaths were ascribed to ordinary influenza and 193 to pneumonic influenza, compared with 308 and 346 respectively for 1921.

(x) *Asiatic Cholera*. No deaths from Asiatic cholera have been recorded in Australia.

(xi) *Cholera Nostras*. For the five years under review only seven deaths have been due to this cause.

(xii) *Other Epidemic Diseases*. The deaths registered under this heading numbered 244 in 1922. The list in 1922 includes the following diseases:—Erysipelas 64, lethargic encephalitis 60, dysentery 44, acute poliomyelitis 42, plague 14, leprosy 6, and other epidemic diseases 14. There were no deaths from plague in the years 1918 to 1920. Outbreaks occurred in 1921 and 1922, causing 61 deaths in Queensland and 10 in New South Wales.

(xiii) *Tuberculosis of the Lungs and Acute Miliary Tuberculosis*. The deaths in 1922 numbered 2,957, viz., 1,775 males and 1,182 females, or 53 per 100,000 persons. The figures for the years 1918 to 1921 were 3,035, 3,479, 3,098, and 3,205 respectively. Of the deaths in 1922, 1,053 occurred in New South Wales, 911 in Victoria, 304 in Queensland, 323 in South Australia, 251 in Western Australia, 103 in Tasmania, and 12 in the Northern Territory.

(xiiia) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in Australia, that which has attracted the most attention is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for investigations concerning the age incidence and duration of this disease.

(xiv) *Tuberculosis of the Meninges*. The number of deaths ascribed to this cause has varied very slightly during the last five years. The greatest number, viz., 218, occurred in 1921, and the least number, viz., 176, in 1922.

(xv) *Other Forms of Tuberculosis*. The deaths in 1922 include the following:—Tuberculosis of the intestines and peritoneum, 92; tuberculosis of the spinal column, 59; tuberculosis of the joints, 23; tuberculosis of other organs, 53; and disseminated tuberculosis, 40.

(xva) *All Forms of Tuberculosis*.—(a) *General*. A complete tabulation of all the different tubercular diseases from which deaths occurred in 1922 will be found in Bulletin No. 40 of "Australian Demography." The total number of deaths due to tubercular diseases was 3,397, viz., 2,013 males and 1,384 females.

(b) *Ages at Death*. The following table shows the ages of these 3,397 persons:—

TUBERCULAR DISEASES.—DEATHS IN AGE-GROUPS, AUSTRALIA, 1922.

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 5 years ..	62	70	132	55 years and under 60	165	64	229
5 years and under 10	27	22	49	60 " " 65	142	28	170
10 " " 15	24	23	47	65 " " 70	75	29	104
15 " " 20	71	102	173	70 " " 75	33	12	45
20 " " 25	152	205	357	75 " " 80	13	11	24
25 " " 30	223	211	434	80 " over ..	5	2	7
30 " " 35	213	199	412	Unspecified ..	2	..	2
35 " " 40	203	148	351				
40 " " 45	198	113	311				
45 " " 50	215	80	295				
50 " " 55	190	65	255	Total Deaths ..	2,013	1,384	3,397

(c) *Occupations at Death, Males.* A tabulation has been made of the occupations of males dying from tubercular diseases during 1922. A summary is given hereunder :—

**OCCUPATIONS OF MALES WHO DIED FROM TUBERCULAR DISEASES.—
AUSTRALIA, 1922.**

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
PROFESSIONAL CLASS—		INDUSTRIAL CLASS—	
Government, Defence, Law ..	99	Art and Mechanic Productions	76
Others	62	Textiles and Fibrous Materials	46
		Food and Drinks	16
DOMESTIC CLASS—		Animal and Vegetable Sub-	
Board and Lodging	48	stances	5
Others	30	Metals and Minerals ..	46
		Fuel, Light and Energy ..	11
COMMERCIAL CLASS—		Building and Construction ..	91
Property and Finance ..	10	Others	413
Art, Mechanic and Textile Pro-			
ducts	17	AGRICULTURAL, PASTORAL,	
Food and Drinks	50	MINING, ETC., CLASS—	
Animal and Vegetable Sub-		Agricultural	145
stances	2	Pastoral	31
Fuel, Light and Metals ..	3	Mining and Quarrying ..	176
Merchants and Dealers ..	56	Others	11
Others	172		
TRANSPORT AND COMMUNICATION		INDEPENDENT MEANS ..	24
CLASS—		DEPENDENTS	155
Railway Traffic	45	OCCUPATION NOT STATED ..	49
Road and Tramway Traffic ..	62		
Sea and River Traffic ..	39	TOTAL MALE DEATHS ..	2,013
Others	23		

(d) *Length of Residence in Australia.* The length of residence in Australia of persons who died from tubercular diseases in 1922 is given in the next table :—

**LENGTH OF RESIDENCE IN AUSTRALIA OF PERSONS WHO DIED FROM
TUBERCULAR DISEASES, 1922.**

Length of Residence in Australia.	Male.	Fem.	Total.	Length of Residence in Australia.	Male.	Fem.	Total.
Born in Australia ..	1,447	1,204	2,651	Resident 10 years & under 15	89	34	123
Resident under 1 year ..	13	6	19	" 15 " " 20	28	1	29
" 1 year ..	22	5	27	" 20 " " over ..	261	89	350
" 2 years ..	9	11	20	Length of residence not stated	87	13	100
" 3 " ..	4	5	9				
" 4 " ..	2	2	4	Total Deaths ..	2,013	1,384	3,397
" 5 " and under 10	51	14	65				

(e) *Death Rates.* The preceding table and the table on page 995 show that, among persons who had lived less than five years in Australia, 480 deaths occurred, and of these 79, or 16.5 per cent., were due to tubercular diseases.

In order to show the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are given in the following table, together with the proportion which deaths from tuberculosis bear to 10,000 deaths from all causes :—

TUBERCULOSIS.—DEATH RATES (a) AND PROPORTION OF TOTAL DEATHS, 1922.

State.	Death Rates (a) from Tuberculosis.			Proportion per 10,000 Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	67	43	56	667	562	622
Victoria	73	63	68	695	716	705
Queensland	57	27	42	513	363	454
South Australia	77	71	74	769	865	812
Western Australia	109	52	83	993	699	884
Tasmania	75	60	68	747	701	726
Northern Territory	418	98	328	2,115	1,250	2,000
Australia	71	51	61	688	627	662

(a) Number of deaths from tuberculosis per 100,000 of mean population.

(f) *Death Rates, Various Countries.* The following table, which gives for a number of countries the death rates from pulmonary and military tuberculosis per 100,000 persons living, shows that Australia occupies a very enviable position when compared with other countries :—

PULMONARY AND MILIARY TUBERCULOSIS.—DEATHS PER 100,000 PERSONS LIVING, VARIOUS COUNTRIES.

Country.	Year.	Death Rate.	Country.	Year.	Death Rate.
Rumania	1914	40	Spain	1921	126
Union of South Africa (Whites)	1919	41	Netherlands	1919	131
New Zealand	1922	50	Switzerland	1919	146
Australia	1922	53	Japan	1921	147
Ontario (Canada)	1919	69	Jamaica	1915	147
Ceylon	1920	70	Sweden	1917	157
Scotland	1921	81	Norway	1917	164
Denmark	1920	82	France	1911	180
England and Wales	1921	88	Germany	1918	185
United States (Registration Area)	1920	101	Ireland	1919	192
United Kingdom	1919	106	Prussia	1918	217
Quebec (Canada)	1919	111	Chile	1914	255
Belgium	1919	112	Finland	1918	258
Italy	1917	118	Austria	1912	283
			Serbia	1911	324
			Hungary	1912	349

(xvi) *Cancer and other Malignant Tumours.*—(a) *General.* The number of deaths from cancer has increased continuously to 5,052 in 1922. Of the deaths registered in 1922, 2,639 were those of males, viz., 950 in New South Wales, 791 in Victoria, 380 in

Queensland, 248 in South Australia, 175 in Western Australia, 94 in Tasmania, and 1 in the Northern Territory; while 2,413 were those of females, viz., 896 in New South Wales, 776 in Victoria, 289 in Queensland, 234 in South Australia, 126 in Western Australia, and 92 in Tasmania. Bulletin No. 40 of "Australian Demography" contains a complete tabulation of the various types of cancer and of the seat of the disease.

(b) *Type and Seat of Disease.* Tables showing the type and seat of disease, in conjunction with age, and also with conjugal condition, of the persons dying from cancer in 1922 will be found in Bulletin No. 40 of "Australian Demography." A summary showing type and seat of disease for the year 1922 is given hereunder:—

DEATHS FROM CANCER.—TYPE AND SEAT OF DISEASE, AUSTRALIA, 1922.

Type of Disease.	Male.	Female.	Total.	Seat of Disease.	Male.	Female.	Total.
Cancer ..	543	491	1,034	Buccal cavity ..	282	27	309
Carcinoma ..	1,428	1,397	2,825	Stomach and liver..	1,135	679	1,814
Epithelioma ..	131	43	174	Peritoneum, intestines and rectum	395	376	771
Malignant disease ..	284	279	563	Female genital organs	..	484	484
Neoplasm ..	21	16	37	Breast ..	..	414	414
Rodent ulcer ..	40	29	69	Skin ..	125	72	197
Sarcoma ..	167	116	283	Other organs ..	702	361	1,063
Other types ..	25	42	67				
Total Deaths ..	2,639	2,413	5,052	Total Deaths ..	2,639	2,413	5,052

(c) *Ages at Death.* The ages of the 5,052 persons who died from cancer in 1922 are given in the following table, which shows that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age-group 60 to 65:—

DEATHS FROM CANCER.—AGES, AUSTRALIA, 1922.

Ages.	Male.	Female.	Total.	Ages.	Male.	Female.	Total.
Under 15 years ..	26	17	43	60 years and under 65	493	331	824
15 years and under 20	10	3	13	65 " " 70	438	318	756
20 " " 25	12	12	24	70 " " 75	329	239	568
25 " " 30	20	9	29	75 " " 80	240	202	442
30 " " 35	26	53	79	80 " " 85	102	91	193
35 " " 40	56	89	145	85 years and over	53	72	125
40 " " 45	76	155	231	Unspecified ..	4	2	6
45 " " 50	127	229	356				
50 " " 55	248	273	521				
55 " " 60	379	318	697	Total Deaths ..	2,639	2,413	5,052

(d) *Occupations at Death.* A summarized tabulation of the occupation of males who died from cancer is given hereunder :—

DEATHS FROM CANCER.—OCCUPATIONS (MALES), AUSTRALIA, 1922.

Occupation.	No. of Male Deaths.	Occupation.	No. of Male Deaths.
Professional Class	147	Agricultural, Pastoral, Mining, etc., Class	673
Domestic Class	96	Independent Means	53
Commercial Class	326	Dependents	35
Transport and Communication Class	205	Occupation not specified	96
Industrial Class	1,008	Total Male Deaths	2,639

(e) *Death Rates.* The following table shows that the death rate for males is higher than that for females in every State :—

DEATHS FROM CANCER.—RATES (a) AND PROPORTIONS, 1922.

State.	Death Rates (a) from Cancer.			Proportion of 10,000 Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	87	85	86	863	1,099	963
Victoria	102	98	100	966	1,114	1,034
Queensland	92	78	85	869	1,040	936
South Australia	98	93	95	978	1,130	1,046
Western Australia	97	79	89	878	1,074	951
Tasmania	87	86	87	867	1,008	931
Northern Territory	38	..	27	192	..	167
Australia	93	88	91	902	1,094	985

(a) Number of deaths from cancer per 100,000 of mean population.

(f) *Comparison with Tuberculosis.* In recent years the death rate from tuberculosis has shown a tendency to decrease, while that for cancer has displayed an almost continuous increase. The table hereunder shows that for each of the years under review, the death rate for cancer has been greater than that for tuberculosis, the excess varying from 9 per 100,000 persons in 1919 to 30 in 1922. Taking the sexes separately, however, the rate for males for tuberculosis exceeded that for cancer in 1919. During the whole period the mortality of females from cancer was always greater than that from tuberculosis.

TUBERCULOSIS AND CANCER.—DEATH RATES (a), AUSTRALIA, 1918 TO 1922.

Year.	Death Rate (a) from Tuberculosis.			Death Rate (a) from Cancer.		
	Males.	Females.	Total.	Males.	Females.	Total.
1918	82	59	70	91	78	84
1919	90	62	76	88	82	85
1920	79	55	67	86	82	84
1921	78	56	68	88	87	87
1922	71	51	61	93	88	91

(a) Number of deaths per 100,000 of mean population.

(g) *Deaths, Various Countries.* The following table shows the Australian death rate from cancer in comparison with that for other countries :—

CANCER.—DEATHS PER 100,000 PERSONS LIVING, VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Ceylon	1920	10	France	1913	83
Rumania	1914	13	United States (Regis- tration Area) ..	1920	83
Serbia	1911	14	Germany	1918	84
Jamaica	1915	17	New Zealand ..	1922	85
Chile	1914	36	Prussia	1918	88
Hungary	1912	47	Australia	1922	91
Quebec (Canada) ..	1919	51	Norway	1917	96
Union of South Africa (Whites)	1919	55	Netherlands ..	1919	107
Spain	1921	60	United Kingdom ..	1919	110
Italy	1917	64	Sweden	1917	116
Belgium	1919	67	England and Wales	1921	122
Japan	1921	71	Scotland	1921	122
Ontario (Canada) ..	1919	77	Switzerland ..	1919	126
Ireland	1919	79	Denmark	1920	136
Austria	1912	81			

The fifth issue of this Year Book contains on pages 230, *et seq.*, a paper dealing, *inter alia*, with the incidence of cancer in Australia.

(xvii) *Meningitis.* The deaths during 1922 from cerebro-spinal meningitis numbered 58, and from all other forms of meningitis 460. Of the former, 23 occurred in New South Wales, 11 in Victoria, 17 in Queensland, 3 in South Australia, 2 in Western Australia, and 2 in Tasmania.

(xviii) *Apoplexy, Hæmorrhage and Softening of the Brain.* The deaths under this heading have been remarkably uniform in number during the period under review. The figures for 1922 are made up as follows :—Cerebral hæmorrhage and apoplexy, 1,334 males and 1,405 females ; softening of the brain, 47 males and 47 females.

(xix) *Organic Diseases of the Heart.* The number of deaths in 1922 was 5,158, viz., 2,874 males and 2,284 females. Of these deaths, New South Wales contributed 1,068 males and 852 females ; Victoria, 840 males and 739 females ; Queensland, 390 males and 269 females ; South Australia, 278 males and 233 females ; Western Australia, 172 males and 94 females ; Tasmania, 121 males and 97 females ; Northern Territory, 3 males ; and Federal Capital Territory, 2 males. The death rates and proportions per 10,000 deaths in 1922 were as follows :—

DEATH RATES (a) FROM ORGANIC HEART DISEASE AND PROPORTION OF 10,000 TOTAL DEATHS, AUSTRALIA, 1922.

State.	Death Rates (a) from Organic Heart Disease.			Proportion of 10,000 Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	98	81	89	970	1,045	1,002
Victoria	108	93	101	1,026	1,061	1,042
Queensland	95	73	84	892	968	922
South Australia	109	92	101	1,096	1,125	1,107
Western Australia	95	59	78	863	801	840
Tasmania	112	91	101	1,116	1,062	1,092
Northern Territory ..	114	..	82	577	..	500
Federal Capital Territory ..	120	..	71	4,000	..	3,333
Australia	102	83	93	983	1,036	1,005

(a) Number of deaths from Organic Heart Disease per 100,000 of mean population.

(xx) *Acute Bronchitis*. Deaths from bronchitis are classified under the following headings:—(a) Acute, (b) chronic, (c) unspecified, under five years of age, and (d) unspecified, five years and over. For the purpose of the abridged classification, (a) and (c) are treated as “acute,” and (b) and (d) as “chronic” bronchitis. Acute bronchitis is credited with 399 deaths in 1918, 420 in 1919, 398 in 1920, 386 in 1921, and 283 deaths in 1922, viz., 130 males and 153 females.

(xxi) *Chronic Bronchitis*. The adjustment mentioned above gives a total of 796 deaths in 1922.

(xxii) *Pneumonia*. The numbers for 1922 were 1,363 males and 788 females, giving a total of 2,151.

(xxiii) *Other Diseases of the Respiratory System*. This heading was established in 1910, the figures previously being included in “Other Diseases” (No. xxxvii). Deaths in 1918 numbered 2,199; in 1919, 2,413; in 1920, 2,527; in 1921, 2,304; and in 1922, 2,208. The total for 1922 is made up as follows, viz.:—Diseases of the nasal fossae, 4; diseases of the larynx, 45; broncho-pneumonia, 1,168; capillary bronchitis, 15; pleurisy, 153; pulmonary congestion and apoplexy, 252; gangrene of the lungs, 17; asthma, 159; pulmonary emphysema, 12; chronic interstitial pneumonia, 307; other diseases of the respiratory system (tuberculosis excepted), 76.

(xxiv) *Diseases of the Stomach (Cancer excepted)*. In 1922 this heading includes ulcer of the stomach, 104 males, 50 females; ulcer of the duodenum, 39 males, 5 females; and other diseases of the stomach (cancer excepted), 143 males, 126 females; a total of 467.

(xxv) *Diarrhœa and Enteritis (Children under two years only)*. The number of deaths due to these causes is always a large one, varying from 1,732 in 1918 to a maximum of 3,067 in 1920. The total for 1922 was 1,743. During 1922, 8,505 children died before reaching their second birthday, and of these, 1,743, or 20.5 per cent., died from diarrhœa and enteritis. The age distribution of children dying from these diseases during the first year of life will be found on page 1026.

The number of deaths, the death rates, and proportions of 10,000 deaths due to infantile diarrhœa and enteritis are given below:—

DEATHS, DEATH RATES (a), ETC., INFANTILE DIARRHŒA AND ENTERITIS.— AUSTRALIA, 1922.

State.	Number of Deaths from Infantile Diarrhœa and Enteritis.			Death Rates (a) from Infantile Diarrhœa and Enteritis.			Proportions of Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	405	288	693	37	27	32	368	353	362
Victoria ..	266	178	444	34	22	28	325	255	293
Queensland ..	158	120	278	38	32	36	362	432	389
South Australia ..	82	45	127	32	18	25	323	217	276
Western Australia	88	70	158	49	44	47	441	597	499
Tasmania ..	31	12	43	29	11	20	286	131	215
Australia ..	1,030	713	1,743	36	26	31	352	323	340

(a) Number of deaths from these diseases per 100,000 of mean population.

(xxvi) *Appendicitis and Typhlitis*. Deaths under this heading numbered 371 in 1918, 352 in 1919, 382 in 1920, 351 in 1921, and 402 in 1922; the total for the last year including 248 males and 154 females.

(xxvii) *Hernia, Intestinal Obstruction*. The deaths under this heading have not varied greatly from year to year, the number registered in 1922 being 545, viz., hernia 171, and intestinal obstruction, 374.

(xxviii) *Cirrhosis of the Liver*. There was little variation in the number of deaths from this cause from 1918 to 1922. A total of 323 deaths was recorded in 1922, viz., 207 males and 116 females.

(xxix) *Nephritis and Bright's Disease*. The number of deaths attributable to these diseases from year to year is very large. In 1918 there were 2,144; in 1919, 2,221; in 1920, 2,286; in 1921, 2,139; and in 1922, 2,333, viz., 1,354 males and 979 females. Of the deaths registered in 1922, 170 were ascribed to acute nephritis, and 2,163 to Bright's disease. New South Wales was responsible for 846 deaths; Victoria for 798; Queensland for 381; South Australia for 176; Western Australia for 83; and Tasmania for 49.

(xxx) *Non-Cancerous Tumours and other Diseases of the Female Genital Organs*. Deaths in 1918 numbered 159; in 1919, 132; in 1920, 154; in 1921, 166; and in 1922, 169. Included in the 169 deaths in 1922 were the following:—Cysts, etc., of the ovary, 33; salpingitis and pelvic abscess, 40; benign tumours of the uterus, 46; uterine hæmorrhage (non-puerperal), 5; other diseases of the female genital organs, 45.

(xxxi) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)*. The number of deaths varied from a maximum of 250 in 1920 to a minimum of 166 in 1919. In 1922 there were 196 deaths.

(xxxii) *Other Puerperal Accidents of Pregnancy and Confinement*. The deaths under this heading in 1918 numbered 409; in 1919, 404; in 1920, 433; in 1921, 435; and in 1922, 425. Included in the 425 deaths in 1922 were the following:—Accidents of pregnancy, 94; puerperal hæmorrhage, 91; other accidents of childbirth, 87; puerperal albuminuria and convulsions, 95; puerperal phlegmasia alba dolens, embolus, sudden death, 49; death following childbirth, 9.

(xxxiii) *All Puerperal Causes*. The 621 deaths in 1922 under the two preceding headings correspond to a death rate of 23 per 100,000 females. It may be expressed in other terms by stating that 1 out of every 219 women confined in 1922 died from puerperal causes. The corresponding ratios for married women were 1 out of every 223 married women, and for single women 1 out of every 157. More detailed information will be found in a series of tables in Bulletin No. 40, "Australian Demography."

The ages of the mothers who died varied from 15 to 47 years as shown in the following table:—

DEATHS FROM PUERPERAL CAUSES.—AGES OF MOTHERS, AUSTRALIA, 1922.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
15 years ..	2	..	2	33 years ..	27	..	27
16 " ..	..	1	1	34 " ..	28	..	28
17 " ..	1	..	1	35 " ..	32	..	32
18 " ..	2	1	3	36 " ..	37	1	38
19 " ..	6	3	9	37 " ..	28	..	28
20 " ..	10	5	15	38 " ..	25	..	25
21 " ..	11	1	12	39 " ..	22	..	22
22 " ..	16	6	22	40 " ..	13	..	13
23 " ..	32	2	34	41 " ..	14	..	14
24 " ..	22	3	25	42 " ..	9	..	9
25 " ..	16	4	20	43 " ..	7	2	9
26 " ..	27	3	30	44 " ..	6	..	6
27 " ..	27	..	27	45 " ..	4	1	5
28 " ..	28	3	31	46 " ..	3	..	3
29 " ..	35	1	36	47 " ..	2	..	2
30 " ..	31	1	32	Unspecified..	1	..	1
31 " ..	24	1	25				
32 " ..	34	..	34	Total Deaths	582	39	621

The total number of children left by the married mothers was 1,603, an average of 2.8 children per mother.

Thirty of the mothers who died had been married less than one year, 87 between one and two years, and 63 between two and three years. The duration of marriage ranged up to 29 years, apart from 9 cases in which the date of marriage could not be stated. A tabulation, distinguishing the ages at marriage, will be found in Bulletin No. 40, "Australian Demography," which also gives a table showing in combination the duration of marriage and previous issue.

(xxxiii) *Congenital Debility, Premature Birth, and Malformations.* The deaths under this heading in 1922 numbered 3,521, of which 3,396 were of children under one year of age. Over 46 per cent. of the deaths of children under one year of age are due to these causes. Returns for 1922 are given in the next table :—

DEATHS FROM CONGENITAL DEBILITY, ETC., AND MALFORMATIONS, 1922.

State.	Congenital Malformations.			Premature Birth, and Injury at Birth.			Congenital Debility, Icterus, Sclerema.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	140	115	255	476	339	815	204	118	322
Victoria ..	86	72	158	302	214	516	166	100	266
Queensland ..	48	40	88	185	104	289	74	36	110
South Australia	42	29	71	91	81	172	41	24	65
Western Australia	30	16	46	67	69	136	20	22	42
Tasmania ..	19	24	43	54	39	93	22	10	32
North'n Territory	..	..	..	1	..	1	..	..	..
Fed. Cap. Terr.	..	..	..	..	..	..	1	..	1
Australia ...	365	296	661	1,176	846	2,022	528	310	838
Number of deaths under one year per 1,000 births	4.39	3.38	3.90	16.66	12.64	14.71	7.48	4.64	6.09

(xxxiv) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are in excess of those due to infantile debility. In 1922, 4,044 deaths were attributed to this cause, as follows: 1,470 occurred in New South Wales, viz., 865 males and 605 females; 1,308 in Victoria, viz., 601 males and 707 females; 491 in Queensland, viz., 305 males and 186 females; 401 in South Australia, viz., 196 males and 205 females; 200 in Western Australia, viz., 128 males and 72 females; 165 in Tasmania, viz., 85 males and 80 females; 8 males in the Northern Territory; and 1 female in the Federal Capital Territory.

Of the males whose deaths were described as due to senility, eight were aged between 55 and 59, and the deaths ranged up to fifteen over the age of 100. Of the females, two were aged between 55 and 60, and nine were of the age of 100 or over,

(xxxv) *Violence.* A very large number of deaths is due every year to external violence, and, as may be expected, male deaths largely predominate. The figures quoted are exclusive of suicides, which have been treated in a separate group. Deaths ascribed to violence numbered in 1918, 2,641, viz., 2,039 males and 602 females; in 1919, 2,799, viz., 2,161 males and 638 females; in 1920, 2,791, viz., 2,159 males and 632 females;

in 1921, 2,892, viz., 2,301 males and 591 females; and in 1922, 2,590, viz., 2,016 males and 574 females. Of the deaths in 1922, those of 757 males and 228 females occurred in New South Wales; those of 516 males and 159 females in Victoria; those of 343 males and 89 females in Queensland; those of 159 males and 40 females in South Australia; those of 166 males and 42 females in Western Australia; those of 66 males and 16 females in Tasmania; and those of 9 males in the Northern Territory.

The following table shows the various kinds of violent deaths which occurred in 1922, distinguishing males and females:—

DEATHS FROM EXTERNAL VIOLENCE.—AUSTRALIA, 1922.

Cause of Death.	Males.	Females.	Total.
Poisoning by food	17	12	29
Venomous bites and stings	19	4	23
Other acute poisonings	37	18	55
Conflagration	3	5	8
Burns (conflagration excepted)	118	159	277
Absorption of irrespirable gases (conflagration excepted)	18	5	23
Accidental drowning	400	84	484
Accidental mechanical suffocation	36	11	47
Traumatism by firearms	81	5	86
Traumatism by cutting or piercing instruments	7	1	8
Traumatism by fall	260	56	316
Traumatism in mines or quarries	43	..	43
Traumatism by machines	33	1	34
Traumatism by other crushing (vehicles, railways, etc.)	494	85	579
Wounds of war	10	..	10
Injuries by animals	50	8	58
Starvation, thirst, fatigue	32	3	35
Excessive cold	1	..	1
Effects of heat	19	10	29
Lightning	9	..	9
Other accidental electric shocks	12	1	13
Homicide by firearms	15	9	24
Homicide by cutting or piercing instruments	2	2	4
Homicide by other means	35	17	52
Fractures (cause not specified)	119	54	173
Other external violence (cause specified)	52	9	61
Other external violence (cause unspecified)	94	15	109
Total Deaths	2,016	574	2,590
Death Rate per 100,000 of mean population	71	21	47

In every kind of violent death there was, therefore, an excess of males, with the exception of conflagration, burns, and homicide by cutting or piercing instruments.

(xxxvi) *Suicide.* (a) *General.* Deaths by suicide have remained fairly stationary during recent years, the number in 1918 being 498, viz., 408 males and 90 females; in 1919, 546, viz., 440 males and 106 females; in 1920, 636, viz., 516 males and 120 females; in 1921, 621, viz., 510 males and 111 females; and in 1922, 533, viz., 441 males and 92 females.

(b) *Modes Adopted.* The modes adopted by persons who committed suicide in the years 1918 to 1922 were as follows :—

SUICIDES, MODES ADOPTED.—AUSTRALIA, 1918 TO 1922.

Mode of Death.	Males.		Females.		Total.	
	Total of 4 years 1918-21.	1922.	Total of 4 years 1918-21.	1922.	Total of 4 years 1918-21.	1922.
Poisoning	331	91	187	44	518	135
Poisonous gas	15	2	6	..	21	2
Hanging or Strangulation	248	70	69	9	317	79
Drowning	148	39	70	22	218	61
Firearms	661	119	33	3	694	122
Cutting or piercing instruments	374	101	26	9	400	110
Jumping from a high place ..	23	3	17	1	40	4
Crushing	37	11	8	1	45	12
Other Modes	37	5	11	3	48	8
Total	1,874	441	427	92	2,301	533

(c) *Death Rates.* The death rates from suicide and the proportion per 10,000 of total deaths are given in the following table :—

SUICIDE—DEATHS, DEATH RATES (a), AND PROPORTION OF TOTAL DEATHS, 1922.

State.	Number of Deaths.			Death Rates (a) from Suicide.			Proportion of 10,000 Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	163	40	203	15	4	9	150	49	106
Victoria. . .	106	24	130	14	3	8	129	34	86
Queensland ..	76	16	92	18	4	12	174	58	129
South Australia ..	32	6	38	13	2	7	126	29	82
Western Australia	52	3	55	29	2	16	261	26	174
Tasmania ..	11	3	14	10	3	6	101	33	71
Fed. Cap. Terr. ..	1	..	1	59	..	36	2,000	..	1,666
Australia ..	441	92	533	16	3	10	151	42	104

(a) Number of deaths from suicide per 100,000 of mean population.

(d) *Ages.* From the following table, which shows the ages of the persons who committed suicide in 1922, it will be seen that both extreme youth and extreme old age are represented :—

AGES OF PERSONS WHO COMMITTED SUICIDE.—AUSTRALIA, 1922.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	1	2	3	60 years and under 65	48	4	52
15 " " 20	18	8	26	65 " " 70	13	4	17
20 " " 25	22	8	30	70 " " 75	19	3	22
25 " " 30	33	11	44	75 " " 80	11	..	11
30 " " 35	35	11	46	80 " " 85	5	..	5
35 " " 40	46	13	59	85 " " 90	3	..	3
40 " " 45	47	6	53	Not stated ..	4	..	4
45 " " 50	52	9	61				
50 " " 55	46	7	53				
55 " " 60	38	6	44	Total Deaths ..	441	92	533

(e) *Occupations of Males.* The following table gives the occupations of the 441 males who committed suicide in 1922 :—

OCCUPATIONS OF MALES WHO COMMITTED SUICIDE.—AUSTRALIA, 1922.

Occupation.	Deaths.	Occupation.	Deaths.
PROFESSIONAL CLASS—		INDUSTRIAL CLASS—	
Government, Defence, Law ..	12	Art and Mechanic Productions ..	17
Others	13	Textiles and Fibrous Materials ..	8
DOMESTIC CLASS—		Food and Drink	6
Board and Lodging	10	Animal and Vegetable Sub-	
Others	3	stances	1
COMMERCIAL CLASS—		Metals and Minerals	9
Property and Finance	2	Building and Construction ..	17
Art, Mechanic and Textile		Others	107
Products	5	AGRICULTURAL, PASTORAL,	
Food and Drinks	19	MINING, ETC., PURSUITS—	
Animal and Vegetable Sub-		Agricultural	60
stances	3	Pastoral	16
Merchants and Dealers ..	13	Mining and Quarrying ..	20
Others	23	Others	10
TRANSPORT AND COMMUNICATION		INDEPENDENT MEANS ..	2
CLASS—		DEPENDENTS ..	4
Railways	5	OCCUPATION NOT STATED ..	22
Roads and Trams	16		
Seas and Rivers	14		
Others	4		
		Total Male Deaths ..	441

(f) *Frequency.* It has been said that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards shows that the assertion needs qualification. The absolute figures have certainly increased, but proportionately to the population the figures for 1916–20, 1921, and 1922 were less than those for 1886–90 and 1891–95. The figures for the five years 1911–15, showed, however, an increase, not only absolutely, but in proportion to the population. The rate of 131.17 suicides per million persons living was the highest of any quinquennium for which figures are obtainable. The five years 1916–1920 show lower figures and percentages than the average of the previous thirty years. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. The figures for the first five periods are, therefore, exclusive of Western Australia :—

SUICIDES.—AUSTRALIA, 1871–75 TO 1922.

Period.	Number of Suicides.			Suicides per One Million of Persons Living.			Suicides of Females to 100 Suicides of Males. Based on—	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871–75 ..	715	150	865	150.94	37.56	99.07	20.98	24.88
1876–80 ..	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881–85 ..	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886–90 ..	1,394	292	(a) 1,686	179.20	43.97	(c) 116.92	20.95	24.54
1891–95 ..	1,574	337	(b) 1,911	181.34	44.09	(d) 117.07	21.41	24.31
1896–1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901–05 ..	2,054	380	2,434	201.78	40.88	124.98	18.50	20.26
1906–10 ..	2,031	437	2,468	186.11	43.22	117.39	21.51	23.22
1911–15 ..	2,546	577	3,123	206.15	50.36	131.17	22.66	24.43
1916–20 ..	2,238	521	2,759	175.46	40.93	108.27	23.28	23.33
1921 ..	510	111	621	183.89	41.33	113.76	21.76	22.47
1922 ..	441	92	533	155.78	33.61	95.72	20.86	21.58

(a) 1705 inclusive of Western Australian figures. (b) 1984 inclusive of Western Australian figures.
(c) 116.49 inclusive of Western Australian figures. (d) 119.11 inclusive of Western Australian figures.

(xxxvii) *Other Diseases.* The number of causes included under this heading is very large, amounting to no less than 85 of the items shown in the detailed classification, and deaths were recorded under every one of these with the exception of the following:—Glanders, rabies, diseases of the parathyroid glands, chyluria, and ringworm, diseases of the scalp, itch. The total number of deaths under “other diseases” in 1918 was 9,226, viz., 5,290 males and 3,936 females; in 1919, 9,390, viz., 5,316 males and 4,074 females; in 1920, 10,048, viz., 5,740 males and 4,308 females; in 1921, 9,995, viz., 5,627 males and 4,368 females; and in 1922, 9,318, viz., 5,276 males and 4,042 females. Some of the diseases included here account for very considerable numbers of deaths. Particulars of the deaths included in 1922 are shown in the following table:—

DEATHS FROM “OTHER DISEASES.”—AUSTRALIA, 1922.

Causes.	M.	F.	Total.	Causes.	M.	F.	Total.
Purulent Infection and Septicæmia	61	60	121	Embolism and Thrombosis (not cerebral) ..	67	73	140
Anthrax	3	..	3	Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids) ..	9	18	27
Tetanus	76	20	96	Diseases of the Lymphatic System	9	9	18
Mycoses .. ..	..	3	3	Hæmorrhage (without specified cause)	12	16	28
Beri-beri	24	1	25	Other Diseases of the Circulatory System ..	51	75	126
Ricketts	7	3	10	Diseases of the Mouth and its Associated Organs ..	9	11	20
Syphilis	71	37	108	Diseases of the Pharynx ..	27	31	58
Gonococcus Infection ..	2	..	2	Diseases of the Esophagus ..	11	4	15
Soft Chancre	1	..	1	Diarrhœa and Enteritis of Children over two years of age and Adults ..	287	320	607
Other Infectious Diseases ..	1	2	3	Ankylostomiasis	6	2	8
Other Tumours (Tumours of the female genital organs excepted)	19	22	41	Intestinal Parasites ..	..	1	1
Acute Rheumatic Fever ..	92	106	198	Other Diseases of the Intestines	69	43	112
Chronic Rheumatism and Gout	81	95	176	Acute Yellow Atrophy of the Liver	6	15	21
Scurvy	2	..	2	Hydatid Tumours of the Liver	30	19	49
Pellagra .. ..	..	1	1	Biliary Calculi	36	83	119
Diabetes	282	402	684	Other Diseases of the Liver ..	96	109	205
Diseases of the Pituitary Gland	3	2	5	Diseases of the Pancreas ..	17	22	39
Exophthalmic Goitre ..	4	54	58	Peritonitis (without specified cause)	40	101	141
Diseases of the Thyroid Gland	6	45	51	Other Diseases of the Digestive System	4	2	6
Diseases of the Thymus Gland	3	2	5	Other Diseases of the Kidneys and their Adnexa ..	110	83	193
Addison's Disease	12	18	30	Calculi of Urinary Passages ..	17	9	26
Diseases of the Spleen ..	2	..	2	Diseases of the Bladder ..	126	29	155
Leucæmia	40	28	68	Other Diseases of the Urethra, Urinary Abscesses, etc. ..	35	2	37
Hodgkin's Disease	34	20	54	Diseases of the Prostate ..	265	..	265
Anæmia, Chlorosis	192	166	358	Non-venereal Diseases of the Male Genital Organs ..	4	..	4
Acute and Chronic Alcoholism ..	89	16	105	Non-puerperal Diseases of the Breast (Cancer excepted) ..	..	5	5
Chronic Lead Poisoning ..	21	4	25	Gangrene	50	45	95
Other Chronic Poisonings ..	2	..	2	Furuncle	16	11	27
Other General Diseases ..	35	39	74	Phlegmon, Acute Abscess ..	63	44	107
Encephalitis	99	77	176	Other Diseases of the Skin and Adnexa	21	34	55
Locomotor Ataxia	55	10	65	Non-tuberculous Diseases of the Bones	59	32	91
Other Diseases of the Spinal Cord	161	99	260	Other Diseases of the Joints (Tuberculosis and Rheumatism excepted) ..	9	12	21
Paralysis without specified cause	145	126	271	Other Diseases of the Organs of Locomotion	2	2	4
General Paralysis of the Insane	103	16	119	Other Diseases peculiar to Infancy	374	243	617
Other Forms of Mental Alienation	39	36	75	Lack of Care (Infants) ..	6	7	13
Epilepsy	100	104	204	Total Deaths	5,276	4,042	9,318
Convulsions (non-puerperal) ..	8	13	21				
Convulsions of Children under five years of age	145	94	239				
Chorea	1	5	6				
Neuralgia and Neuritis ..	8	14	22				
Other Diseases of the Nervous System	162	120	282				
Diseases of the Eye	3	3	6				
Diseases of the Ear	33	30	63				
Pericarditis	48	29	77				
Endocarditis and Acute Myocarditis	303	268	571				
Angina Pectoris	150	57	207				
Diseases of the Arteries, Atheroma, Aneurism ..	605	283	888				

(xxxviii) *Unspecified or Ill-defined Diseases.* A considerable number of cases must be included under this heading from year to year, comprising 664 in 1918, 707 in 1919, 805 in 1920, 721 in 1921, and 665 in 1922. The detailed classification distinguishes these ill-defined diseases under two headings—sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, dropsy, ascites and general œdema, etc. In 1922 the number of cases of death which came under the first of these categories was 34, and those belonging to the second, 631. It is, of course, true that some cases must always occur in which the disease is not well characterized, or respecting which sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

17. Causes of Deaths in Classes.—The figures in the preceding sub-sections relate to certain definite causes of death, and it must be acknowledged that they are of greater value in medical statistics than a mere grouping under general headings. The classification under fifteen general headings adopted by the compilers of the International Nomenclature is, however, shown in the following table, together with the death rates and percentages on total deaths pertaining to those classes:—

DEATHS, DEATH RATES (a), ETC., IN CLASSES.—AUSTRALIA, 1922.

Class.	Total Deaths.			Death Rates. (a)			Proportion of 10,000 Deaths.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1. Epidemic, Endemic, and Infectious Diseases	3,112	2,263	5,375	110	82	96	1,064	1,026	1,048
2. General diseases not included above	3,589	3,437	7,026	127	125	126	1,227	1,558	1,369
3. Diseases of the Nervous System and of the Organs of Sense ..	2,751	2,409	5,160	97	88	93	941	1,092	1,006
4. Diseases of the Circulatory System	4,128	3,112	7,240	146	114	130	1,412	1,410	1,411
5. Diseases of the Respiratory System	3,299	2,139	5,438	116	78	98	1,128	969	1,060
6. Diseases of the Digestive Organs	2,727	2,154	4,881	96	79	87	932	976	951
7. Diseases of the Genito-Urinary System and Adnexa	1,911	1,276	3,187	67	47	57	653	578	621
8. Puerperal Condition .. ..	..	621	621	..	23	11	..	281	121
9. Diseases of the Skin and of the Cellular Tissue	150	134	284	5	5	5	51	61	55
10. Diseases of the Bones and Organs of Locomotion	70	46	116	3	2	2	24	21	23
11. Malformations	365	296	661	13	11	12	125	134	129
12. Early Infancy	2,084	1,406	3,490	74	51	63	713	637	680
13. Old Age	2,188	1,856	4,044	77	68	73	748	841	788
14. External Causes	2,457	666	3,123	87	24	56	840	302	608
15. Ill-defined Diseases	414	251	665	15	9	12	142	114	130
Total	29,245	22,066	51,311	1,033	806	921	10,000	10,000	10,000

(a) Number of deaths per 100,000 of mean population.

18. Causes of Deaths of Children under one Year.—"Bulletin No. 40, Australian Demography," contains tables showing for twenty-six causes the ages at death of children dying during the first year of life. In the Bulletin mentioned, the particulars are given for males and females separately for Australia, but the totals for Australia only are shown hereunder for both sexes combined:—

CAUSES OF DEATHS OF CHILDREN UNDER ONE YEAR.—AUSTRALIA, 1922.

Age at Death.			Measles.	Whooping Cough.	Diphtheria.	Croup.	Erysipelas.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Tuberculosis, other forms.	Syphilis.	Simple Meningitis.	Cerebro-Spinal Meningitis.	Convulsions.	Bronchitis.
Under 1 week	..	..	..	..	1	..	..	..	1	..	6	4	..	85	7
1 week and under 2	..	..	1	1	..	..	1	..	..	..	..	3	..	25	9
2 weeks	..	3	..	2	1	..	2	..	..	1	2	..	..	15	10
3	..	1 month	..	3	3	..	1	..	..	..	1	3	..	8	8
1 month	..	2 months	..	27	2	1	8	..	..	..	6	4	..	14	24
2 months	..	3	..	23	3	..	5	..	2	1	8	6	..	5	15
3	..	4	..	13	4	..	1	..	..	1	8	7	1	6	6
4	..	5	..	8	..	..	2	..	2	2	4	8	..	5	7
5	..	6	..	5	1	..	1	..	3	..	2	8	..	4	5
6	..	7	..	9	2	..	2	..	8	..	2	13	12	4	8
7	..	8	..	4	1	1	1	..	3	..	1	12	1	7	5
8	..	9	..	1	3	..	1	1	2	..	2	8	2	2	6
9	..	10	..	14	7	1	..	..	6	1	1	13	1	7	6
10	..	11	..	2	4	5	2	..	2	..	..	14	2	1	4
11	..	12	..	1	3	6	1	..	..	..	1	9	..	2	3
Total under 1 year			5	117	39	6	25	3	29	6	44	113	9	190	123
Number of deaths from each cause per 1,000 births			.04	.85	.28	.04	.18	.02	.21	.04	.32	.82	.07	1.38	.89

Age at Death.			Broncho-Pneumonia.	Pneumonia.	Pleurisy.	Other Diseases of Stomach.	Diarrhœa and Enteritis.	Hernia.	Intestinal Obstruction.	Malformations.	Congenital Debility, Icterus and Sclerema.	Premature Birth.	Injury at Birth.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other Causes.	Total.
Under 1 week	..	..	9	12	..	8	10	2	1	258	351	1,538	45	526	12	85	2,961
1 week and under 2	..	..	17	10	..	6	15	..	1	52	97	164	6	50	..	40	497
2 weeks	..	3	18	8	..	6	17	1	..	39	42	95	..	16	..	29	304
3	..	1 mth.	7	11	..	1	24	..	..	16	27	45	..	10	..	25	193
1 month	..	2 mths	54	21	..	15	117	1	..	45	87	85	1	10	1	53	577
2 months	..	3	37	17	..	6	125	..	..	32	66	28	1	..	..	38	420
3	..	4	25	9	1	15	143	4	8	27	55	4	..	1	..	23	362
4	..	5	30	17	1	9	138	..	5	10	38	3	..	2	..	19	311
5	..	6	27	14	1	4	162	1	7	18	22	1	..	1	..	22	309
6	..	7	18	15	..	5	144	..	8	12	13	2	..	..	..	23	290
7	..	8	29	17	..	3	97	..	8	4	12	3	..	1	..	22	232
8	..	9	23	19	1	3	97	..	6	5	7	..	..	..	..	18	208
9	..	10	14	13	1	4	91	1	5	9	5	..	..	..	..	22	222
10	..	11	18	8	..	5	75	..	6	4	6	1	..	..	..	23	182
11	..	12	24	18	..	2	79	..	2	5	10	..	..	..	..	17	183
Total under 1 year			350	209	5	92	1334	10	57	536	838	1,969	53	617	13	459	7,251
Number of deaths from each cause per 1,000 births			2.55	1.52	.04	.67	9.70	.07	.42	3.90	6.09	14.32	.39	4.49	.10	3.34	52.74

Premature birth, diarrhœa and enteritis, congenital debility, and "other diseases peculiar to early infancy," accounted for 4,758 deaths, or more than 65 per cent. of the total deaths under one year. The last line of the table shows the number of deaths from each cause per 1,000 births.

Among the more important causes, the maximum number of deaths from syphilis, convulsions, bronchitis, pneumonia, malformations, premature birth, congenital debility, and other diseases of early infancy occurred in the first month of life, while whooping cough and broncho-pneumonia were most fatal during the second month. Diarrhœa and enteritis carried off more children in the sixth month than in any other, the numbers gradually decreasing toward the end of the year.

19. **Ages at Death of Married Males and Females, and Issue.**—"Bulletin No. 40, Australian Demography," contains a number of tables for Australia, showing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue of married persons who died in 1922. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1922 numbered 15,177, and of married females, 14,030. The tabulations which follow deal, however, with only 14,978 males and 13,932 females, the information in the remaining 297 cases being too incomplete to be utilized. The total number of children in the families of the 14,978 males was 73,863; and of the 13,932 females, 71,068. The average number of children is shown for various age-groups in the following table:—

**AGES AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.—
AUSTRALIA, 1922.**

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years ..	1.00	0.67	70 to 74 years ..	5.92	6.33
20 to 24 years ..	0.72	1.14	75 „ 79 „ ..	6.46	6.59
25 „ 29 „ ..	1.31	1.69	80 „ 84 „ ..	6.84	6.54
30 „ 34 „ ..	1.99	2.89	85 „ 89 „ ..	7.00	6.77
35 „ 39 „ ..	2.65	3.39	90 „ 94 „ ..	7.03	6.35
40 „ 44 „ ..	3.20	3.65	95 „ 99 „ ..	7.45	5.52
45 „ 49 „ ..	3.43	3.81	100 years and up- wards ..	9.14	5.22
50 „ 54 „ ..	3.86	3.91	Age unspecified ..	4.67	3.45
55 „ 59 „ ..	4.27	4.54			
60 „ 64 „ ..	4.80	5.47	All ages ..	4.93	5.10
65 „ 69 „ ..	5.44	5.96			

The figures in the preceding table include the issue both living and dead, the proportion between them, taking the issue of deceased males and females together, being about 1,000 to 299. The totals are shown in the following table:—

ISSUE OF MARRIED MALES AND FEMALES.—AUSTRALIA, 1922.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ..	29,505	28,674	58,179	Living ..	26,748	26,663	53,411
Dead ..	8,982	6,702	15,684	Dead ..	9,886	7,771	17,657
Total ..	38,487	35,376	73,863	Total ..	36,634	34,434	71,068

These figures show a masculinity in the births of 3.66, which agrees fairly well with the experience of the birth statistics.

20. **Ages at Marriage of Deceased Males and Females, and Issue.**—While the table giving the average families of married males and females naturally shows an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shows a corresponding decrease in the averages as the age at marriage advances:—

AGES AT MARRIAGE OF DECEASED MALES AND FEMALES, AND AVERAGE ISSUE.—AUSTRALIA, 1922.

Age at Marriage.		Average Family of Males.	Average Family of Females.	Age at Marriage.		Average Family of Males.	Average Family of Females.
Under 20 years	..	6.42	7.14	50 to 54 years	..	1.83	..
20 to 24	..	5.88	5.55	55 „ 59	..	1.34	..
25 „ 29	..	5.15	4.04	60 „ 64	..	1.02	..
30 „ 34	..	4.47	2.76	65 years and upwards	..	.72	..
35 „ 39	..	3.65	1.58	Age unspecified	..	5.38	5.27
40 „ 44	..	3.14	.58				
45 „ 49	..	2.25	.005	All ages	..	4.93	5.10

21. **Duration of Life after Marriage of Males and Females.**—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables containing the result do not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in Bulletin No. 40 of “Australian Demography,” pages 193 to 199.

22. **Birthplaces of Deceased Married Males and Females, and Issue.**—The following table shows the birthplaces of married males and females who died in 1922, together with their average issue. No generalizations can, of course, be made in those cases in which the number of deaths was small, but where the figures are comparatively large, as in the case of natives of Australia, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of different age-constitution of the locally born population of the various States due to the different dates of the foundation of settlement. Thus, New South Wales and Tasmania, owing to their early settlement, contain a larger number of locally-born inhabitants of advanced ages than Victoria and Queensland, in which colonization was begun almost fifty years after the foundation of New South Wales. It will be noted that the differences occur both in the male and female averages. Although the figures apply to Australia as a whole, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State.

BIRTHPLACES OF DECEASED MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.—AUSTRALIA, 1922.

Birthplace.	Married Males.		Married Females.		Birthplace.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales	2,766	4.85	3,002	5.14	British India	40	3.03	27	5.00
Victoria	2,542	4.18	2,346	4.15	Other Asiatic British Possessions	5	2.00	2	1.50
Queensland	493	3.86	542	3.51	China	62	3.21	4	9.50
South Australia	972	4.73	879	4.86	Other Asiatic Countries	18	3.11	4	6.50
Western Australia	115	5.11	114	4.46	African British Possessions	22	3.77	13	4.08
Tasmania	524	5.29	639	5.25	Other African Countries	1	10.00	1	..
Northern Territory	1	1.00	2	0.50	Canada	26	3.77	17	5.82
New Zealand	115	2.82	78	2.92	Other American British Possessions	4	6.75	3	1.33
England	3,784	5.30	3,088	5.49	United States	35	3.86	22	4.36
Wales	151	5.15	117	6.25	Other American Countries	15	4.47	6	4.67
Scotland	987	5.21	833	5.40	South Sea Islands	16	2.44	5	3.60
Ireland	1,410	5.79	1,759	5.94	At Sea	50	5.78	43	6.35
Isle of Man	6	4.83	1	4.00	Unspecified	47	4.62	26	4.27
Other European British Possessions	21	4.57	7	5.14					
Denmark	100	5.19	30	4.07	Total	14,978	4.93	13,932	5.10
France	31	3.19	17	4.06					
Germany	339	6.24	231	6.68					
Italy	52	5.25	8	6.38					
Norway	40	4.08	6	3.67					
Russia	52	3.85	25	5.40					
Sweden	58	5.28	9	5.78					
Other European Countries	78	4.31	26	3.81					

23. Occupations of Deceased Married Males, and Issue.—A final tabulation shows the average issue in combination with the occupation of deceased males.

OCCUPATIONS OF DECEASED MARRIED MALES, AND AVERAGE ISSUE.—
AUSTRALIA, 1922.

Occupation.	Deaths of Married Males.	Average Family.	Occupation.	Deaths of Married Males.	Average Family.
PROFESSIONAL CLASS—			INDUSTRIAL CLASS—		
Government, Defence, and Law	409	4.10	Art and Mechanic Products	582	4.59
Others	540	3.97	Textiles and Fibrous Materials	290	4.46
			Food and Drinks ..	198	4.67
DOMESTIC CLASS—			Animal and Vegetable Sub-		
Board and Lodging ..	295	3.74	stances	48	4.56
Others	192	3.87	Metals and Minerals ..	446	4.93
			Fuel, Light and Energy ..	50	3.64
COMMERCIAL CLASS—			Building and Construction..	958	4.70
Property and Finance ..	204	4.17	Others	2,769	5.00
Art, Mechanic and Textile			AGRICULTURAL, PASTORAL,		
Products	134	3.63	MINING, ETC., CLASS—		
Food and Drinks	454	4.81	Agricultural	2,478	6.26
Animal and Vegetable Sub-			Pastoral	598	5.58
stances	56	4.25	Mining and Quarrying ..	823	5.16
Fuel, Light and Metals ..	33	5.00	Others	125	5.14
Merchants and Dealers ..	475	4.52			
Others	771	3.47	INDEPENDENT MEANS ..	385	5.41
TRANSPORT AND COMMUNICA-			DEPENDENTS	3	2.00
TION CLASS—			OCCUPATION NOT STATED ..	366	3.39
Railways	421	4.86			
Roads and Trams	496	4.37			
Seas and Rivers	283	4.12			
Others	96	3.88	Total	14,978	4.93

§ 4. Graphical Representation of Vital Statistics.

1. General.—The progressive fluctuations of the numbers of births, marriages, and deaths are important indexes of the economic conditions and social ideals of a community. Graphs have accordingly been prepared which show these fluctuations. It should be remembered, however, that, normally, the increase of births and marriages should be proportional to the growth of population.

2. Graphs of Annual Births, Marriages, and Deaths.—The outstanding features of the graph representing births are:—An almost continuous rise in the numbers from 1860 to 1891; a decline till 1898, associated with the commercial crisis of 1891–3; a sharp fall in 1903 which accompanied a severe drought; an uninterrupted increase from 1903 to 1914, the total for 1914 being the highest recorded; a rapid decline until 1920, the result of war conditions. The figures for the last three years show a tendency to return to normal.

The graph for marriages up to 1914 discloses approximately the same features as that for births—financial crises and droughts having a similar effect. The numbers for 1914 and 1915 showed a considerable increase over previous years. From 1916 to 1918 there was a rapid fall, the numbers being much below those of pre-war years. During 1919 and 1920 the recovery was very rapid, the total for the latter year being the highest ever recorded. The totals for 1921 and 1922 were not so favourable.

The characteristic feature of the graph of deaths is its irregular nature. On the whole, however, there is an increase which is due to the growth of population.

3. Graphs of Annual Birth, Marriage, and Death Rates, and Rate of Natural Increase.—The graph of the birth rate indicates a well-marked decline throughout the whole period. This reduction of rate has been subject to fluctuations, there being two periods of arrested decline, viz., from 1877 to 1890 and from 1903 to 1912.

The variations in the marriage rates are less abrupt than those in the birth and death rates, the rate for 1920, viz., 9.62 per thousand, does not differ very much from that for 1860, viz., 8.42. The lowest rate for the period was 6.08 in 1894, which marked the culmination of the commercial depression.

On the whole, the graph for the death rate furnishes clear evidence of a satisfactory decline during the period. The graph brings into prominence six years in which the rates were very high when compared with adjacent years, viz., 1860, 1866, 1875, 1884, 1898, and 1919. Epidemics of measles were largely responsible for the high rates in the first five years, while influenza caused the increase during 1919.

The graph of natural increase shows roughly the same variations as that for the birth rate, but the influence of the death rate is indicated by the very low rates of natural increase for 1875, 1898, and 1919, which resulted from the exceptionally high death rates of those years.

Diphtheria.*

1. Gravity of the Disease.—Much study and a gradually widening experience have combined to make the diphtheria problem acute, at least to such investigators and administrators as take a scientific interest in medical treatment and community welfare. The problem may be stated thus: "Assuming that diphtheria," as Dr. Northup said in 1902, "is the disease of which we have the greatest knowledge as to causation, clinical symptoms, treatment and prevention, how comes it that while the case mortality may be generally decreasing, the total deaths registered from this disease during the past ten years show in some places an increase that is causing anxiety, if not alarm, and are still increasing?"

2. Object of Present Inquiry.—The present inquiry is undertaken with the object of finding, if possible, and setting forth some of the elements or factors that come into evidence in the search for a solution of the apparent medical paradox. In carrying it out the author has, as regards the disease, no proposition to prove, no thesis to propound or support, no elenchus to bring forward or argue, no cause to plead, no method of diagnosis to recommend, no line of treatment to urge, nothing novel to suggest. All that is attempted is a review of the facts and methods that must be considered in dealing with this dangerous disease. The contribution may be regarded as a study in the logic of medicine as applied to the problems of diphtheria, although, within the limits of space prescribed, an exhaustive examination of all the literature published on the various aspects of the subject is naturally out of the question.

3. Desiderata in Investigations.—Perhaps it is not sufficiently recognised that any investigations into the origin, character, treatment, and control of a disease of this nature entail two distinct tasks—firstly, the collecting of accurate and uniform statistics, and secondly, the drawing of logical inferences from them. The first should be essentially the work of medical men; the second is the business of expert statisticians. The most cursory examination of the published statistical data will show that a large proportion thereof is obviously untrustworthy. It would be unwise, however, in an investigation of this sort to pass by any statistics or class of statistics without careful examination and evaluation. In fact everything connected with the diagnosis, treatment, and control of diphtheria should be scrutinized in order to determine what is the real position of this disease at the present moment. For the purpose of this investigation the most likely sources of information have been explored and utilized.

4. Definition of "Diphtheria."—Probably no one would find much fault with the definition or description of "diphtheria" as an acute infectious disease accompanied by a membranous exudation on a mucous surface. In its typically recognized form it is so; but it must not therefore be inferred that the disease is as much differentiated from other diseases as an animal, plant, or metal is from other organisms or substances.

Forms of disease, corresponding very closely in character to diphtheria as defined or described, have been recognized and reported in medical literature for the past seventeen hundred years. These forms, however, were included in a general class of which neither the bounds nor the subdivisions were clearly defined. Down to the middle of the last century they were generally spoken of as croup, and were described under that heading. Croup, in the *Encyclopædia Britannica*, 1910, Vol. 7, p. 511, is said to be "a name formerly given to diseases characterized by distress in breathing accompanied by a metallic cough and some hoarseness of speech. It is now known that these symptoms are often associated with diphtheria (*q.v.*), spasmodic laryngitis (*q.v.*), and a third disease, spasmodic croup, to which the term is now alone applied."

The year 1858 might be selected as marking a new departure in the study of diphtheria, or even as a time of new manifestations of the spread, if not of the character, of the

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disease itself. In 1821 Bretonneau submitted to the French Academy of Medicine a treatise on this disease to which he had given the distinctive name of *Le Diphthérite*. This was one result of a general order issued by Napoleon regarding the investigation of the disease known by the name of croup. In the United Kingdom, the name diphtheria, was not adopted for a considerable time. Dr. Cheyne (1833) does not mention it; nor Marshall Hall (1837); nor Graves (1848); nor Thomas (ed. by Frampton, 1853); nor Copland (1858). Copland, however, in a comprehensive bibliography, mentions Bretonneau's name and contributions by him in the archives of medicine.

In January and February, 1859, "The Lancet Sanitary Commission Report on Diphtheria" was published in "The Lancet." Reference to the chief features of the disease, and the problems that had arisen in connexion with it is made in the first volume of the New Sydenham Society's "Annual Compendium of Scientific and Practical Medicine, 1860. Cyclopædias like Ziemssen's (1876) and Nothnagel's (1902) give good lists of literature on the subject; while Systems of Medicine, like Reynolds' (1866), with its article by William Squire, furnish instructive views on the subject at the dates of their publication. These, with clinical lectures, text-books of medicine, and contributions to medical magazines, supply the principal facts regarding the knowledge of the origin, symptoms, treatment and control of the disease down to the discovery of the bacillus, or the beginning of the Antitoxin Period.

It is generally recognized that certain requirements should be fulfilled if statistics are to yield trustworthy inferences. Among these are the following: (1) that reporters should be dealing with the same disease; (2) that medical practitioners should be reporting cases uniformly; (3) that registrars should be following the same method of recording primary and secondary causes of death; (4) that statisticians should be using the same methods in dealing with the notifications of cases and deaths.

Certain historical facts have to be noted, since the value for comparison of any series of statistics will depend largely on the period to which it relates. For example, it was not till 1855 that diphtheria was separated in English statistics from scarlet fever. The confusion of diphtheria with croup down to 1858 still influences statistics collected at the present time through inexactness in diagnosis and lack of uniformity in recording.

Is there an accepted definition or description of the disease called diphtheria? Does the word call up the same clinical or pathological picture to the minds of all physicians and pathologists and statisticians who employ it or who hear it?

Newsholme writing in 1889 on the use of statistics says: "There appears to be a fashion even in the names of diseases. In one doctor's practice nearly all the deaths from respiratory diseases will be returned as bronchitis, in another, perhaps as pneumonia." He then speaks of the effect of this in interpreting "national statistics," the errors tending to balance each other. With respect to the present subject he says:—"Perhaps there is no other case in which variations of nomenclature are so unfortunate as in diphtheria. A large proportion of the deaths due to this disease are doubtless returned as ulcerated throat, quinsy, laryngitis, membranous laryngitis, and especially croup. I have known cases certified as membranous laryngitis which were not entered in the Registrar-General's weekly reports as diphtheria, although they were acknowledged to be this by the practitioner in attendance, when inquiry was made by the local sanitary officials."

A perusal of the multifarious literature on the subject shows that in Europe, America, and Australia there is no stated accepted or recognized uniformity between the clinical and the statistical nomenclature of diphtheria.

A quotation has been given from Newsholme (1889) respecting difficulties arising from variations in nomenclature. But even where the same system of nomenclature is in use, there is room for fallacy on account of inexactness of notification.

Such inexactness, it may be noted, is not necessarily due to carelessness. It arises mainly from necessary limitations of clinical evidence even when all available means have been taken to ensure accuracy.

It might be thought that new methods of diagnosis would tend to increase the accuracy of statistics. Even if they should do so clinically in respect to a disease, there is still a statistical element to be considered. In the case of diphtheria there is a special source of error that may affect the case mortality and the general death rate. This arises from the practice, in some places, of notifying "non-clinical carriers" as sufferers from the disease, and including them in the statistics as "cases."

5. **Incidence of the Disease.**—(i) *General.* “The Lancet Sanitary Commission Report on Diphtheria,” as abstracted in The Year Book of Medicine and Surgery for 1859, contained some facts showing that the disease is not solely dependent on the unhealthiness of the localities where it prevails; that wherever it has existed, among many varieties of its seat and symptoms, it has always preserved its distinctive characteristics and required the same kind of treatment; that so far no influence or condition has been detected to which the production of diphtheria can be ascribed; that it has prevailed at all seasons, and in all weathers, but that excessive alternations of temperature, or of the density of the air appeared to favour its development, and that its spread was believed to be occasioned in great measure by contagion.

In the same Year Book it is stated that the following conclusions are deducible from the table of cases published in the “British Medical Journal”: Sex does not appear to influence the liability; age is positively influential, childhood and early youth being far more often attacked than more advanced age; hygienic conditions, occupation, food, and clothing, purity or impurity of air have not been shown to have much effect, the disease having occurred in many instances where the surrounding circumstances were favourable; our knowledge regarding meteorology extends no further than that the disease has prevailed during the most opposite states of the weather; though the disease may be communicated by contagion sometimes, that is not the usual mode by which it spreads.

These statements, formulated by the editors, Dr. Harley, Dr. Handfield Jones, Mr. Hulke, Dr. Graily Hewitt, and Dr. Odling, may be accepted as setting forth trustworthy observations regarding the characteristics of diphtheria at that date.

(ii) *Locality.* Both the reports mentioned above agree as to the general features of the epidemic as it occurred in various localities at that time. Locality did not appear to have much effect on its manifestations. The subject of locality has, however, acquired a new significance in view of the changes, geographical and social, that have occurred since then, and that alter the whole aspect of the incidence and spread of the disease.

In the Encyclopædia Medica (1916) Dr. Goodall writes: “Before the appearance of Newsholme’s work, it has been shown that for England and Wales one of the most striking features with respect to the prevalence of diphtheria was that, whereas up to 1880 the disease was incident upon the rural to a greater extent than upon the urban population, since that date the reverse has been the case; there has been an increase both in rural and urban diphtheria, but the urban incidence has risen to a much higher degree than the rural. London has especially suffered. Newsholme’s observations show that this increase in urban diphtheria is not confined to England and Wales, but has also occurred in countries so widely separated as the United States, Japan, and South Australia. It is reasonable to suppose that the wonderful improvements effected during recent years in our means of transit have had no small share in contributing to this increase.”

Squire, in Reynold’s System of Medicine (1866), writes: “It is somewhat remarkable that though diphtheria existed both in India and California, we have no history of any outbreak of it in Australia until 1859, when Mr. James Moore (Australian Medical Journal, July, 1859) records nine deaths from this cause, and the occurrence of 275 cases at the same time in New Norfolk, Tasmania. This part of the world is perhaps more exclusively in communication with England than any other. The appearance of the disease there is not until after it had attained in this country to its full epidemic development.” In the same year cases elsewhere in Australia are reported in the local newspapers.

In more recent times Cormack (Quain’s Dictionary of Medicine, 1890) remarks: “In cold damp weather the mortality is greatest;” and he adds, “The medical constitution of the season, and the character of an epidemic greatly influence prognosis.”

(iii) *Cyclical Changes.* Newsholme (Vital Statistics, p. 119) says: “The fact that certain diseases, especially those of an infectious character, recur after an interval of years, shows that, apart from the influence of the season of the year, there are periods of change which require for their completion a series of years. Mr. Netten Radcliffe has drawn attention to the fact that the law of periodicity of epidemic and pandemic diseases is not yet determined. Two factors appear to be at work: (1) the influence of an accumulation of susceptible persons in the intervals between two epidemics of the

same disease; and (2) certain extraneous conditions which appear to be operative in determining the periodicity, but about which little or nothing is known." He refers to Radcliffe's inclusion of "the great development of diphtheria within the last thirty years" under the second factor.

(iv) *Hygienic Conditions.* Chapin gives a comparative study on this subject. He states (Sources and Modes of Infection) that "during the decade 1890-1899, Boston had the best sanitary administration of any of the large cities, though New York stood high. The death rate from diphtheria in both cities was 84 per 100,000 living, from scarlet fever—25 for Boston, and 33 for New York. Certainly neither Chicago nor Cincinnati enforced such rigorous measures, yet the rates in these two cities were 72 and 71 for diphtheria and 17 and 7 for scarlet fever. Among the smaller Massachusetts cities Fall River has usually had a rather inefficient health service, and little hospitalization, yet the death rate from diphtheria was 21 and from scarlet fever 15 per 100,000 living, while in Worcester the figures were 48 and 8, and this notwithstanding the fact that in Fall River the proportion of children is much greater than in most American cities, and that the population is exceptionally ignorant as measured by illiteracy. Worcester has had a contagious-diseases hospital since 1897, and has removed to it in some years as high as 63 per cent. of its diphtheria cases. In general, Worcester secures an excellent registration of cases and consequent isolation. Nevertheless Worcester has recently had, notwithstanding its increasing hospitalization and good home isolation, a severe outbreak of the disease. It seems a fair assumption that some factor much more important than the recognized causes of the disease has been at work in Worcester. If it were not so, the reported cases of the disease should not have risen from 132 in 1905 to 1,178 in 1907."

(v) *Social Conditions.* According to the Year Book, 1859, Lancet Report, "The fatality of epidemic sore throat and diphtheria appears to have been half as great again in the middle as in the lower ranks of society when a comparison is made with the mortality arising out of diseases of all kinds." In the same year, the British Medical Journal, speaking of Dr. T. H. Smith's experiences, says: "His remarks are in the main confirmatory of those of other observers. He testifies to the remarkable exemption of the pauper class of patients, to the distinctness of the disease from scarlatina, and to the absence of any peculiar localization of the disease in the haunts of fever and cholera." In Germany it was shown that the years of increase down to 1912 were partially times of crises and high prices, and the scarcity of habitations, a specially important factor, was on the increase, chiefly as regards small dwellings.

(vi) *Age and Sex.* The following table, from Allbutt's System of Medicine, is compiled from the County of London Records of Diphtheria for ten years ending 1903. It shows the age and sex incidence.

AGE AND SEX INCIDENCE OF DIPHTHERIA—COUNTY OF LONDON,
DECENNium ENDING 1903.

Ages.	Cases Notified.		Deaths.		Case Rate per 1,000 Living.		Percentage Fatality.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
All Ages ..	53,671	63,890	9,059	9,592	2.5	2.8	16.9	15.0
Under 1 year ..	1,477	1,128	630	528	2.8	2.2	42.7	46.8
1-2 years ..	4,044	3,561	1,571	1,445	8.4	7.4	38.8	40.6
2-3 ..	5,219	4,777	1,537	1,488	11.3	10.4	29.5	31.2
3-4 ..	6,264	6,144	1,481	1,469	13.9	13.7	23.6	23.9
4-5 ..	6,180	6,473	1,188	1,326	14.0	14.7	19.2	20.5
5-10 ..	16,854	20,328	2,110	2,692	8.1	9.7	12.5	13.2
10-15 ..	5,865	7,753	309	341	2.9	3.8	5.3	4.4
15-20 ..	2,766	3,812	73	81	1.4	1.7	2.6	2.1
20-25 ..	1,802	3,193	43	39	0.8	1.2	2.4	1.2
25-35 ..	2,099	4,287	43	77	0.6	1.0	2.0	1.8
35-45 ..	739	1,587	32	43	0.3	0.5	4.3	2.7
45-55 ..	235	603	24	23	0.1	0.3	10.2	3.8
Above 55, ..	127	244	18	40	0.1	0.1	14.2	16.4

Dr. Tatham says, "This table indicates that, according to London experience, which extends to 117,561 cases within a period of ten years, the incidence of diphtheria is mainly limited to the period of childhood, the ages from two years to five being those most liable to attack. Comparatively few cases occur in the first year of life, but the fatality among infants attacked at that age is excessively high. In proportion to population, the notified cases are comparatively few in number after the tenth year of life, and the case fatality is below the mean except among women above the age of 55 years."

(vii) *Susceptibility*. The subject of susceptibility in races apparently has not been intensively studied, but it would appear on a cursory review of statistics of mortality that the negro in America is less susceptible than the white. The effect of previous diseases, as giving immunity or predisposition, does not appear to have been the subject of close inquiry. In the Year Book, 1859, mention is made of 47 cases, 12 of which had suffered previously from scarlet fever.

(viii) *Prevalence*. The testimony to the increased prevalence of diphtheria in almost all countries is universal. It is the most urgent problem of the present day as regards the disease.

6. *Type and Epidemic Constitution*.—(i) *General*. In 1918, when influenza was reported in various parts of the world, there was not a little speculation as to whether it was a new disease, requiring a new name and new methods of treatment and control, or whether it was one of the several protean forms that had been studied in time past, and was to be regarded as influenza showing a particular type or epidemic constitution that had been observed in former outbreaks. Some consider the question still debatable.

(ii) *Changes in Type*. An epidemic of a communicable or infectious disease in one place may show, for example, an alteration in age-incidence when compared with an epidemic of the same disease at a former time. Again, there may be a difference in its extent, its prevalence, or its virulence, these last two characters not being necessarily concomitant.

The term "epidemic constitution" is defined and illustrated by Latham at considerable length. The name, he says, "indicated nothing of the nature of the thing itself; but it acknowledged a reality and a power." In the course of his exposition he says: "Behold, for a season mankind in various places and circumstances require a treatment for their diseases contradictory to the experience of former times. Then wait for a season, and behold, mankind, in the same places, and in the same external circumstances, will require a treatment for the same diseases contradictory to the experience of the present times. But neither now, nor formerly, nor hereafter, will there be found in the vital being of men themselves, in their places or circumstances, anything to reconcile the contradictions or at all explain them." Again he says: "Let present indications be justly chosen, and fulfilled according to a fit measure, and then the treatment which they suggest, while it is variable at different times, will be at all times uniform in its success."

Sydenham, who devoted a large amount of study to this subject, pointed out that acute diseases showed a long period of evolution, with a rise, a decline and a fall, extending over centuries and, at the same time, seasonal variations with waves measured in months so that their character and reaction to treatment varied at intervals.

In recent times the general subject of type has been discussed by Sir Humphry Rolleston under the heading "The Change of Type of Disease." He says: "At the present time no one doubts that certain diseases have shown changes of type; scarlet fever is universally recognized to have become much milder." Brownlee finds that though there is not any evidence that the amount of scarlet fever (or the infectivity of the causal agent) is less now than in the latter half of the last century, the mortality (or the virulence of the organism) has greatly fallen. Pneumonia is another example of a disease in which the virulence, as shown by the mortality, has increased, and the type of the disease has, since the reappearance of influenza in 1889-1890, undergone some change, the disseminated form being common and the frank lobar pneumonia less frequent. The seasonal variation of type was shown in a well-marked degree by the two waves of influenza in the spring and autumn of 1918, the high rate of thoracic complications and of mortality in the second wave being associated with *streptococcus hemolyticus* and the *pneumococcus*.

"In the Royal Navy the spring wave of influenza was accompanied by 0.4 per cent. of complications and 0.03 per cent. mortality, whereas in the autumn wave the incidence of complications was 6.8 per cent. and of deaths 2.8 per cent."

The subject of epidemic constitution came into prominence at the time when diphtheria was recognized in England as a distinct disease. In the Sydenham Society's Year Book, 1859, a summary is given of an article by Henry Kennedy. He states it "as a patent fact, that both animal and vegetable life is subject at times to epidemic influences, which at one period raise, and at another period depress, the standard of health. These determine the so-called "*constitutio anni*." These were carefully noted by the older writers, and their practice shaped accordingly." He also strongly insists on the need for a discriminating therapeutism, affirming that no single plan can possibly meet the ever-varying shades of disease, some inflammations requiring wine (*alone*), some mercury, some bleeding, general or local, or both." The view of Dr. Adolf Gottstein on this subject is that the waves of diphtheria prevalence are attributable to rhythmical variations in power of resistance of successive generations, the weeding out of the less resistant being accomplished to different extents at different times.

Since 1859 much has been written on the subject of change of type or epidemic constitution of diphtheria, and not a little speculation has been hazarded, and investigation made as to the causes of such changes.

(iii) *Bacteriological Causes.* Bacteriological causes have been suggested for change of type. It is said that bacteria may vary in pathogenicity from internal causes, and that these may give rise to such cyclical recurrences of disease as have been observed in measles and influenza. Again, it is suggested that change of type may be due to external causes, such as food, alcohol, climatic conditions, overcrowding, overwork, changes in resistance of the patients. These have been discussed at some length by Rolleston and others. In this connexion the difference between prevalence and virulence has to be noted. It has been suggested that fluctuations in prevalence may illustrate changes in the life-history of the disease organism, while mortality may express the accident of its manifestation in surroundings unfavourable to the person attacked.

(iv) *Influence of Urban and Rural Distribution of Population.* In the case of diphtheria it would appear that the variation in relative proportions in the urban and rural populations may have had a pronounced effect on the incidence, if not also on the virulence, of the disease in recent times. Formerly it was essentially a rural disease, now it is becoming a characteristically urban disease throughout many, if not most, parts of the world.

(v) *Necessity for Separate Individual Diagnosis.* It has been said that although cases may be regarded as belonging to types, each case requires its special study, speaks its proper language. The laity have considered this in connexion with treatment. Amiel says: "Why do doctors so often make mistakes? Because they are not sufficiently individual in their diagnoses or their treatment. They class a sick man under some given department of their nosology, whereas every invalid is really a special case, a unique example. How is it possible that so coarse a method of sifting should produce judicious therapeutics? Every illness is a factor simple or complex, which is multiplied by a second factor, invariably complex—the individual, that is to say, who is suffering from it—so that the result is a special problem, demanding a special solution, the more so the greater the remoteness of the patient from childhood or from country life."

(vi) *Quantitative and Qualitative Observation.* If there be such types, or epidemic constitutions, in time and place, then in proportion as an investigator takes account of them, he will make his observations and frame his experiments quantitatively and qualitatively so as to yield trustworthy results, and thus to give indications for further research and treatment.

7. *Diagnosis.*—Correct diagnosis of any disease is obviously of paramount importance as affecting the validity of inferences drawn from statistics of cases or deaths connected therewith. Before considering diphtheria, it may be well to examine the subject of diagnosis in general, in view of the circumstance that it is not studied to the extent it deserves by writers on public health. The following is extracted from "*Vital Statistics, a Discussion of What They Are and Their Uses in Public Health Administration*," by

John W. Trask, Assistant Surveyor-General, United States Public Health Service, Washington: "Perhaps the most common error entering into death registration, and therefore into mortality statistics, is in connexion with the statement of cause of death. Aside from the fact that in the instances in which it has been impossible for the attending physician to feel reasonably certain as to the nature of the terminal illness, a cause of death is nevertheless usually stated in the certificate, and also the fact that at times the physician knowing the nature of the illness may, in the belief that he is shielding the family from odium, or because of their whim, intentionally state an erroneous cause of death, there still remain the many unavoidable errors of mistaken diagnosis. Just how great a factor this last may be it is difficult to estimate. However, the findings of Dr. Richard C. Cabot give at least a hint of its possible importance, and the extent to which it may affect that part of mortality statistics relating to causes of death. [In a study of 3,000 autopsies with regard to the relation of the actual cause of death as found post-mortem to the clinical diagnosis, Cabot found that the percentage of correct diagnoses in various diseases ranged from as low as 16 in acute nephritis to 95 in diabetes mellitus.]

The cases studied were hospital cases under conditions assumed to be favourable to correct diagnosis. It is quite safe to assume that in medical practice at large the percentages of correct diagnosis would be found lower than those found by Cabot."

Diphtheria did not come within the scope of Dr. Cabot's inquiry. It is difficult to estimate what the percentage would have been in respect to this in pre-Klebs-Löffler bacillary days. And yet all statistics of diphtheria of those days have to be considered in the light of accuracy of diagnosis when employed for the purposes of comparison.

When the antitoxin period is reached the question becomes still more important. In an article by Dr. Armand Ruffer, in *The Medical Annual* for 1895, the following occurs: "Before we come to the results which have been obtained by this method, it is necessary to point out one cause of error which affects all statistics of diphtheria. One finds that a great many cases which are certified as diphtheria and admitted into hospitals, are, as a matter of fact, not diphtheria at all, as the specific bacillus cannot be found in them. Such cases nearly always recover, and if one were to include them in the statistics of diphtheria cases treated by serum, the mortality would appear to be far too low. It is necessary, therefore, before the value of treatment can be established, to examine each case so treated for the diphtheria bacillus. This should be systematically carried out when the antitoxin treatment is being tried."

8. Treatment.—(i) *General.* Too much stress cannot be laid on the necessity for early identification and treatment of the disease. It has been noted that diphtheria differs in certain respects from other diseases like scarlet fever, measles, and mumps, which run a fairly normal course and tend to recovery of the patient. With diphtheria, in addition to the general or constitutional symptoms, there is often a local condition of the throat that makes feeding and breathing extremely difficult, besides acting as a factory for the making and supplying of poisons to the system. It is this local lesion that is regarded as the crux in various forms of treatment, and that may form one of the most important factors in the spread of the disease. In the use of stimulants in this disease Jacobi's observations are worthy of note. He says: "A mild invasion does not assure a mild course. Never has a 'possible superfluous' tonic or stimulant done harm in diphtheria, but many a case has a sad termination because of a sudden change in the character of the disease putting the bright hopes of the physician to shame."

The literature on the subject of local applications in past times is very considerable. It was recognized that measures that could destroy the presumed infective material locally without harmful results were of the greatest use. Modern measures, it has been said, are not intended to remove the diphtheritic membranes but only to destroy the bacillus and to prevent the production of toxins. If they help to do this they are worthy of consideration, much more so if they do it effectively. A good deal of study has been devoted to the technique of local applications. It is difficult to obtain a substance that is effective in the short time allowed for its application, while the difficulty of applying in the case of young children is sometimes very great, and the patients become agitated and exhausted in their struggles to resist. Among the approved substances are potassium permanganate, boric acid, corrosive sublimate alone or combined with ichthyol, sozodol, with milk of sulphur. Löffler used a solution of menthol, toluol, creoline, metacresol, or perchloride of iron, and recorded 96 cases treated without a death. Trousseau (1867)

tells of his inquiries into a remarkable stopping of an epidemic that was characterized by a frightful mortality. He found through the parish priest that the cessation was due to an old woman's treatment. Trousseau witnessed and verified the results, and found that the change was brought about by the use of a gargle of alum and vinegar in water. The mode of treatment was thereupon printed, published, and sent to the different communes. Bretonneau adopted it, and it was used by all physicians in the treatment of diphtheria. Many other substances have been used, from the time of Aretaeus downwards; and it would appear that a large part of their efficacy depended on the manner of application and the skill of the attendant.

(ii) *Antitoxin.* (a) *Mouth Administration.* Hewlett, in 1902, recorded experiments showing that administration by the mouth or rectum was valueless. His conclusions were founded on the fact that such administration to rabbits and guinea-pigs did not prevent these animals from succumbing within a short time to lethal doses of toxins administered subcutaneously, whereas the subcutaneous injection of antitoxin acted as a preventive or antidote. This, it must be noted, assumed that absorption from the alimentary tract would be the same in human beings as in rodents. Pilcher and Paton had great confidence in the oral administration of antitoxin. King and McLintock immunized animals with diphtheria toxins orally administered, by taking precautionary measures against the action of the gastric juice. In respect to clinical evidence, it is stated that at the East London Hospital for Children all serums were given by the mouth, except in cases of very urgent laryngeal diphtheria, when it was given subcutaneously. In "Osler and McCrae's Modern Medicine" it is stated: "Oral administration is too slow and its effects too uncertain for practical use."

(b) *Efficacy of Serum.* From the first introduction of antitoxin, there has been much testimony both in favour of and against its use, and a relatively less amount of critical examination of the arguments adduced in support of conclusions.

Behring, the inventor, was severely criticized by Hansemann, but it has been stated that the dispute in Germany was much influenced by personal animosities. Dr. Rupp criticized the statistics of Monte and Kretz, and concluded that they did not satisfactorily prove the efficacy of antitoxin. In London, Lennox Browne treated two series of 100 cases each, the one with, the other without, antitoxin, and although the series treated with antitoxin showed an apparent reduction in mortality as compared with the other, from a careful analysis he believed that this was apparent and not real, and that grave complications, such as anuria, nephritis, and cardiac failure were increased by the use of the serum. Gayton, of the North-Western Fever Hospital, considered that although the mortality in his cases was somewhat lowered, this was due to a less virulent form of the disease rather than to the treatment. He summed up his view thus: "Those cases that under the old treatment would probably have died were still fatal under the new, those which might get better recovered in about the same proportion, whilst the mild cases improved no more rapidly—indeed, rather the contrary."

Behring himself was modest in his claims for the efficacy of antitoxin. He said: "I am now definitely of opinion that under suitable treatment with my remedy, the mortality from diphtheria may be reduced to under 5 per cent. if the serum be used in good time—that is, before the third day of illness."

At the present time, the use of antitoxin is widespread and strongly recommended, statistics being used as conclusive arguments for its employment in practically all known or suspected cases of diphtheria.

(c) *Dosage.* Practice has been extremely varied both in regard to the amount of the dose, and the length of the intervals between the doses. The dose has varied from less than 600 units to 9,000 units. In one recorded case a child of 3 years received 225,000 units. Some physicians gave 1,000 units for an average dose. D'Agnanno ascribes the different percentages given by various observers to: (1) The period of the disease at which the injection is practised; (2) The quantity of the serum used; (3) Local treatment; (4) The varying proportion of faucial and laryngeal cases. Commenting on this the

recorder in "The Medical Annual for 1898" said: "But he omits a very important point, that of numbers, for to get a percentage which will be practically correct, we need at least thirty-three thousand cases." In one administration area the Health Department distributed 27,000 units for each case reported. So far, there does not appear to be any recognized dosage table for age, sex, general condition, type of disease, or complications.

(d) *Time of Administration.* All practitioners who use antitoxin urge that it should be administered at the earliest indications of the presence of the disease; many employ it if there is reason to suspect that the disease may possibly be present.

(e) *Sequelæ.* Sequelæ of antitoxin treatment are varied and frequent. In some statistical records abscesses were noted at the seat of puncture in 1.2 per cent. of cases; joint pains in 6.5 per cent.; pyrexia with or without rash or pain in 19.8 per cent.; urticarial, erythematous, or scarlatinal rashes in 35.2 per cent.; albuminuria in from 53 to 24 per cent.; nephritis in from 1.2 to 0.5 per cent.; lobular pneumonia in from 2.5 to 1.6 per cent.; and various paralyses in from 2.3 to 13.2 per cent. Other statistics would suggest that complications are rare. In the case of albuminuria and nephritis it would not be possible, without a large number of control cases, to say what effects might be due to the disease and what to the treatment. In the Chicago Hospital Statistics it is recorded that cervical adenitis was noted in 62 per cent.; paralysis, usually of the muscles of deglutition, in 9 per cent., not including those in which the heart was involved; and 5 per cent. suffered from otitis media. Of 834 deaths, 137 were due to broncho-pneumonia, and 78 to myocarditis.

(f) *Anaphylaxis.* On this subject of serum treatment a general statement by Dr. Rendle Short demands consideration. In his book, *The New Physiology in Surgical and General Practice* (1922), he writes: "It is well known that when certain proteins are injected into an animal's blood-stream, so far from antibodies being formed, there may be an increased sensitiveness developed, so that a second injection months or years afterwards may produce severe or even fatal symptoms. A few cases are on record in which second injections of horse-serum containing diphtheria or other antitoxin have caused most alarming illness or death. Now that so many men who were wounded in the war and given a dose of antitetanic serum are about in the community, it is possible that there may be trouble one day when one of them is given diphtheria antitoxin or some other preparation of horse-serum protein. It is also well known that if the second dose is given within a week, this sensitization (anaphylaxis) does not occur."

9. Results of Treatment.—(i) *General.* Reference has been made above to the results when the treatment is begun at an early stage of the disease. Statistics dealing with this will be considered later. Other circumstances influencing results will now be considered.

(ii) *Ballard's Researches.* Ballard in 1858-9 studied the conditions pertaining to eighty fatal cases in the parish of Islington. He classified them in respect to their truly diphtheritic character: "Class I., cases in which he obtained satisfactory evidence of the presence of the true diphtheritic exudation upon the throat, or in which he saw it himself during life. Class II., cases which were certified as deaths from diphtheria by the medical attendant, but in which he obtained no particulars of the appearance of the throat. Class III., cases in which he was assured by the medical attendant that the exudation was absent. Class I. consists of 31 males, 25 females—total 56. Class II. of 4 males, 9 females—total 13. Class III. of 6 males, 5 females—total 11. General totals—41 males, 39 females. As to age, 5 deaths occurred under 1 year; 12 from 1 to 2; 11 from 2 to 3; 13 from 3 to 4; 7 from 4 to 5; 19 from 5 to 10; 7 from 10 to 20; 6 at 20 and upwards. As to the duration of the disease, in four infants under one year, the main duration was four days; at each of the other ages, it was from nine to eleven days. As to the modes of death, and the period at which they prevailed, it appears from Dr. Ballard's tables that 'the danger from which a fatal result is mainly to be apprehended in the course of the first week of the disease is extension of the disease to the upper part of the air passages, with consequent asphyxia. The sudden deaths in this week are probably due to the same cause, giving rise to spasmodic closure of the glottis. As the malady advances into the second week, the chances of death from this

cause are only equal to those from the general prostration of the vital powers. In the third and fourth weeks, the latter is the condition mostly to be dreaded; the sudden deaths at this time being probably due to syncope." As to the social position of the patients, it appears that "the fatality of epidemic sore-throat and diphtheria appears to have been half again as great in the middle as in the lower ranks of society, when a comparison is made with the mortality arising out of diseases of all kinds'."

The number dealt with is relatively small, and the total number of patients is not stated, but the results are interesting as showing that the ratio of the first five to the second five years' deaths was 48 to 19 at that time—that 60 per cent. were under 5, and 23.75 per cent. between 5 and 10.

(iii) *London Returns, 1892 to 1912.* The London notifications of cases show that for 1892 to 1912, about one-third of the cases are under the age of 5 years, and about another third between the ages of 5 and 10; also that age has a marked influence on case mortality.

(iv) *Returns for Scotland, 1860 to 1911.* The mortality rates for the population of Scotland per 10,000 for various triennial periods since 1860 are shown in the following table:—

DIPHTHERIA AND CROUP.—MORTALITY RATES PER 10,000 LIVING,
SCOTLAND, 1860 to 1911.

Ages.	1860-2.	1870-2.	1880-2.	1890-2.	1900-2.	1909-11.
Under 5 years	33.3	31.5	25.7	22.3	12.2	11.9
Under 10 years	7.9	7.5	6.6	6.4	3.3	4.5
Under 15 years	1.8	1.1	1.2	1.0	.7	.8
15 years and over	.4	.3	.2	.2	.1	.1
All Ages ..	5.9	5.5	4.6	3.8	2.0	2.0

It will be observed that the decrease for "all ages" in the first four periods was becoming more marked, that from the fourth to the fifth it was strongly marked, but that from the fifth to the sixth there was no decrease. The compiler notes that a third element has to be considered, viz., a change in the age-distribution of attacks which has accompanied the increased prevalence which he has been considering. He shows that with the increasing prevalence there has been a relatively greater invasion of the age-period 5 to 15. This is an age of relatively fewer deaths.

The significance of this table may be better appreciated when one considers that notification of diphtheria was not universal until 1899. Then, under radically changed circumstances, an active health propaganda made its effects evident in urban and rural communities alike. It is obvious that no accurate estimate is possible regarding the case mortality in diphtheria previous to the adoption of universal and uniform notification of the disease.

To control infectious diseases effectively, it is necessary (a) to detect every case in the earliest stage at the earliest possible moment; (b) to isolate the sick from the well and to keep them isolated; (c) to isolate, under observation, persons who may be contacts of the sick. Isolation consists in establishing a "biological barrier," which need not be geographical or physical. The prime requisite in all procedure, for control, is notification to the administrative authorities. Such notification was optional on the part of local authorities in Great Britain (with a certain provision for compulsory

notification in Scotland) from 1889 to 1899, when it was made compulsory and universal. "Hospitalization" of infectious diseases is of recent date in the United Kingdom and most other countries. Its specific adjuncts are speedy and accurate bacteriological diagnosis; safe and ready transport, admission to hospital at all hours and constant supervision by trained attendants; district or hospital nurses for visiting "out-door" cases; inspectors trained and certificated in disinfection and other sanitary administration. Except in a few favoured localities, these means were not available for the treatment or control of infectious diseases before antitoxin times. The Isolation Hospitals Acts in England date from 1893 and 1901.

(v) *The Co-efficient of Expectancy.* Sir Malcolm Morris in "The Practitioner" in 1895 said: "The results so far achieved by the antitoxin treatment of diphtheria appear to me to give solid ground for the hope that at last a real antidote to this bane of child life has been discovered. Of course, in estimating the value of any new remedy which excites the enthusiasm of the profession, it is always well to leave what dressmakers, I believe, call a 'margin for shrinkage.' The weak point in the new treatment, to my mind, is that it is too successful; its effects are painted in colours too brilliant not to fade a little by and by. One of the lessons which the philosophy of medical history teaches is that a new remedy always cures."

Some years ago a writer in "Le Monde Médical" said: "Every new method of treating chronic pulmonary tuberculosis, provided it be harmless, always yields satisfactory results. This is an axiom which is absolutely true, one which I should like to see inscribed in large letters on the first page of every new work on phthisiotherapy because, if it be not borne in mind, it renders it impossible to gauge the value of any new mode of dealing with this disease." The co-efficient of expectancy can in some cases be estimated in respect to its effects on physician, patient, friends and nurses.

In other cases it may be difficult to gauge the immediate and the remote effects of expectation and confidence on the treatment of patients and the control of disease unless experimental investigation is made on an extensive scale and according to the canons of the logic of medicine.

(vi) *Results on Convalescence.* The general statement has been made by Dr. C. H. Roger that statistics clearly establish that, under the antitoxin medication, the period of convalescence has been considerably reduced. There seems, however, to be a lack, if not a complete absence, of statistics bearing on this subject.

10. Interpretation of Results.—(i) *General.* Much of the "advance" of modern times, many of the recent errors in general medicine, abandoned or still in vogue, have resulted from inferences drawn from some assumed scientific principle or solitary fact and applied to modes of treatment.

In 1864 Dr. Barclay delivered the Lumleian Lectures to the College of Physicians on "Medical Errors: Fallacies Connected with the Application of the Inductive Method of Reasoning to the Science of Medicine." Referring to what may be called the variable causes influencing the results of an attack of disease he says: "First, before the attack: the sex, age, and social position of the individual; his previous state of health, including early constitution, acquired habit, and the effect of the relative amount and purity of food and air; his actual condition, whether suffering from any minor ailment (to say nothing of major complications, which may be excluded), from actual privation or cold, or from any recent excess. Secondly, as regards the seizure itself: its immediate cause; its intensity; the rapidity of its development and progress; and the extent to which the special organ attacked is affected by it. Thirdly, the circumstances external to the patient influencing the progress of the disorder: such as his home; the means at his command; the friends that surround him, ignorant or well-informed; his nurse and his food, including stimulants, as well as other nourishment; the skill of his medical attendant; and the judgment with which other subsidiary remedies are employed; if necessary, the influence which the conditions

calling for their employment exercise over the disease, no less than the remedies themselves; and, perhaps more than anything else, the discretion with which the amount of stimulants is strictly limited to the exigencies of the particular case. Lastly: the wonderful and inexplicable influence of mind over body, the condition of hope or fear, of quiet confidence or restless anxiety. This list is far within the limits of all possible circumstances affecting the result, because it is intended to be general, and to include those only which are undoubtedly of sufficient power to lead to a fatal result, or a lingering convalescence. I need not, therefore, go into a detailed examination of them individually. The list is a long one, and each circumstance mentioned presents several varieties; so that if it be required to neutralize their influence completely, the number of cases selected must be such as shall fairly represent all possible conditions in these respects, and afford a true comparison between the two series. For whatever the number needed, it must be borne in mind that it is essentially a comparison, and that a series of hundreds of cases which seemed to do well under a particular mode of treatment is valueless, because perchance a similar series in which the remedy was not administered might have done better." Elsewhere he says: "The statistics of our large hospitals collected under ever-varying circumstances as to the antecedents of the patient, the nature of the attack, and the pet prejudices and customs of the physician by whom he is treated, amounting as they soon would do to a large number, would afford a basis of calculation on such points of very considerable value, because the chances of error would, from the nature of the inquiry, be comparatively small."

Sir Henry Holland says: "Through medical statistics lies the most secure path in the philosophy of medicine." As an illustration of the practical application of statistics he says: "A question may be started whether it is possible to reach any sound conclusion without including in the average those cases where there has been no treatment at all. If the tables show a mortality of 75 per cent. under one method of treatment, and only 60 per cent. under another, this does not logically prove the latter to be beneficial, but merely gives evidence that the former is injurious."

It may be well to illustrate the present subject by applying some of the recognized tests of medical logic to the statistics accepted as more or less authoritative in order to see how far the statements of facts, *i.e.*, the figures, and the inferences drawn from them, *i.e.*, the conclusions, conform with the canons of logic—that is, to find out what information the statistics are capable of supplying.

When Balfour found that Skoda's patients in Vienna were left to sink or swim without phlebotomy, while others at the same time, and in the same city, and under similar conditions, were being treated *secundum artem* by profuse blood-letting, he was witnessing an investigation according to the logical "Method of Difference." When patients in Edinburgh were being treated, one set by profuse bleedings and another in similar conditions at the same time by varying degrees of small bleedings, the investigation was being made by the "Method of Concomitant Variations."

According to Jacobi, the doctors in Vermont in 1862 made a complete and wholesale reversal of the treatment during an epidemic of diphtheria, and the death rate fell from 90 per cent. to 10 per cent. This was an application of the "Method of Difference"—provided that, in the meantime, no unrecorded or unnoticed seasonal change had occurred, or other varying element had complicated the problem. As a rule, few investigations can be made under such favourable conditions, *i.e.*, conditions so definite as to yield accurate comparisons and trustworthy results.

From what has been said and quoted above, it will be seen that the problem of diphtheria is a very complex one, involving many factors, and demanding for its investigation extensive series of accurate medical observations coupled with expert statistical analysis in order to reach even a fair amount of probability in respect to the influence of any given or supposed single factor.

(ii) *Influence of Diagnosis.* In dealing with questions of the incidence, treatment, and case mortality of any disease, the prime essential is a certainty that all the facts and figures that are being studied refer to the subject of investigation, in other words, the first requisite is exact definition, which means diagnosis. On this Dr. C. V. Chapin, in 1910,

stated the position in respect to diphtheria very clearly. He said: "Many had long recognized that the diagnosis of diphtheria was difficult. It was suspected that many cases, because of this difficulty, escaped isolation entirely. When the culture method of diagnosis was devised, I became enthusiastic and hopeful. We adopted it in Providence in January, 1895, and soon after required a negative culture before the patient was released from isolation. Hill has shown that without cultures the chance of error in the diagnosis of diphtheria is 50 per cent., which corresponds entirely with my frequently expressed opinion before the advent of the culture method. It is evident, then, that the general use of cultures ought to bring to light great numbers of cases of diphtheria which were formerly unrecognized, and this it certainly does. If such an improvement in diagnosis, and consequently in isolation, is brought about by the use of cultures, and if by the same means isolation can be maintained until the patient is certainly free from infection, there ought to follow a marked reduction in this disease. But it was quite otherwise. The deaths in Providence, which in 1894 had numbered 45, rose to 79 in 1895 and 125 in 1896, nearly twice as many in proportion to the population as there were in 1883, when there was no isolation, no disinfection and no antitoxin. The cases rose from 166 in 1894 to 386 in 1895 and 890 in 1896. The apparent reduction in the fatality rate from 27.71 to 14.07 indicates very plainly that the culture method of diagnosis had discovered a very large number of mild cases that would have previously been unrecognized, for antitoxin was only a minor factor in reducing the fatality, as it had been used in only a little over one-third of the cases."

Other investigators have written in similar terms, and it must be recognized that accuracy of diagnosis has given rise to a false impression as to the effect of any system of treatment on the case mortality of present-day diphtheria when compared with the figures for the period from 1859 to the discovery of the bacillus of the disease. The question naturally arises whether any other factors have had a similar influence on the study of the problem.

Reference may be made to other diseases with which diphtheria is closely allied, viz., typhoid fever, measles, scarlet fever and whooping cough.

An Official Report of the State of Massachusetts deals with the results locally of the progress of preventive medicine. It gives the median and average number of deaths and death rates for the more prominent communicable diseases for the three ten-year periods 1890-99, 1900-09, and 1910-19. It says: "The statistics for the single year 1919 are given also to show that the deaths and death rates are still on the downward trend despite the increase in population. The common factors in the reduction of all diseases have been isolation of cases and quarantine of contacts."

The special factor in diphtheria which assisted in the lowering of the death rate is diphtheria antitoxin, introduced in 1894, and within a few years universally used. Prior to 1894, from 20 to 30 died out of every 100 ill with diphtheria, but in 1919 only 7 children died out of each 100 cases of diphtheria.

A remarkable fact in diphtheria fatality has been demonstrated in Paris and reported by Roux in the *Office International d'Hygiène Publique*, 1919, XI., No. 11. In the Children's Hospital in Paris there were 15,271 cases of diphtheria for the five years 1914-19. Of this number only 378 died, giving a fatality rate of 2.64 per cent. This indicates that the fatality rate of 7.2 per cent. for Massachusetts is still capable of being reduced."

Statistics relating to Massachusetts are given in the appended series of tables:—

POPULATION OF MASSACHUSETTS.

Year.				Population.		Year.				Population.	
1890				2,238,943		1910				3,380,151	
1900				2,805,346		1919				4,033,826	

TYPHOID FEVER.

Period.				Deaths.		Death-rate (per 100,000).	
				Median.	Average.	Median.	Average.
1890-99	..	..	..	737	727	29.4	29.5
1900-09	..	..	..	518	501	16.6	16.7
1910-19	..	..	..	258	239	7.0	6.6
1919 (a)	..	..	..	..	..	..	..

(a) Deaths, 102 : death-rate, 2.6.

WHOOPING COUGH.

Period.				Deaths.		Death-rate (per 100,000).	
				Median.	Average.	Median.	Average.
1890-99	..	..	..	278	294	11.2	11.9
1900-09	..	..	..	269	303	8.3	10.1
1910-19	..	..	..	263	307	7.2	8.2
1919 (a)	..	..	..	..	..	..	..

(a) Deaths, 319 : death-rate, 7.6.

MEASLES.

Period.				Deaths.		Death-rate (per 100,000).	
				Median.	Average.	Median.	Average.
1890-99	..	..	..	127	155	5.2	6.3
1900-09	..	..	..	192	228	6.4	7.6
1910-19	..	..	..	263	278	7.6	7.4
1919 (a)	..	..	..	..	..	..	..

(a) Deaths, 183 : death-rate, 4.6.

SCARLET FEVER.

Period.				Deaths.		Death-rate (per 100,000).	
				Median.	Average.	Median.	Average.
1890-99	..	..	..	338	412	11.5	15.8
1900-09	..	..	..	299	284	10.0	9.9
1910-19	..	..	..	156	173	4.1	4.8
1919 (a)	..	..	..	..	..	..	..

(a) Deaths, 130 : death-rate, 3.3.

DIPHTHERIA.

Period.	Deaths.		Death-rate (per 100,000).	
	Median.	Average.	Median.	Average.
1890-99	1,440	1,413	60.3	57.6
1900-09	749	867	23.9	29.0
1910-19	627	638	17.1	17.3
1919 (a) .. ..	..	..	..	..

(a) Deaths, 591 ; death-rate, 14.8.

From these tables it will be seen that in typhoid fever, whooping cough, scarlet fever, and diphtheria there has been a gradual reduction during the three ten-year periods. The case of measles is exceptional, and this has to be correlated with the fact that usually this disease is communicable by a sufferer to a healthy person for two or three days before any clinical symptoms are manifest (unless routine examination is made of the buccal cavity), whereas, in typhoid fever, whooping cough, and scarlet fever, a sufferer is usually obviously ill before being in a condition to infect another person. In the case of diphtheria, a reduction in the death-rate is manifest during the periods, but the reduction in scarlet fever is about the same in amount, and in typhoid fever is much greater. Had the diphtheria rate decreased as did that of typhoid fever, the average death-rate instead of being 17.3 would have been 12.8 only. The recorder states that "The factors common in the reduction of all diseases have been isolation of cases and quarantine of contacts," and then he says: "The special factor in diphtheria which assisted in the lowering of the death-rate is diphtheria antitoxin, introduced in 1894, and within a few years universally used." The death-rates from typhoid fever have fallen from 29.5 to 6.6 and from diphtheria from 57.6 to 17.3 ; and from the figures as stated there is nothing to show that any form of treatment was a special factor in the reduction that occurred, or was a factor in preventing the further reduction that might have been expected from the general common factors, viz., "isolation of cases and quarantine of contacts." In all investigations there is a danger of attaching too much importance to one factor to the exclusion of another, or of several.

In 1843 Sir Thomas Watson, in his lectures on "The Principles and Practice of Physic," wrote: "The exceeding value of statistical returns in determining the *causes* of disease has been admirably set forth by Dr. Alison ; but, for directing the treatment of individual cases, it is far more profitable (as some one has well expressed it) to *watch* than to *count*. To use or to withhold a given remedy simply because it is found, by numerical calculation, that in cases nominally the same, recoveries have been more frequent when that remedy was employed on the one hand or omitted on the other, would be to sacrifice the plain and perhaps pressing indications of a particular case, to the statistical averages of diseases having merely a common denomination. To repeat what I have said elsewhere—we do not necessarily take the same symptoms as indications of treatment, which we trust to as signs of disease. We treat, indeed, not the so-called disease, but its accidents ; the vital manifestations which proclaim its character and intensity, foreshow its tendencies, and illustrate its course."

It is an axiom in medicine that one cannot prescribe according to statistics. In any system of treatment, new or old, the manner of action of any agent or remedy demands most careful and critical study. No one can forecast what will prove to be essential and what accidental in its use, or what its effect will be in any particular direction. Examination, experiment, and logical induction alone can give trustworthy information.

In old times, wounds were healed through the introduction of the "Sympathetic Powder." Forty years ago the "carbolic spray" on the wound was regarded by many as the one essential in the new antiseptic system. Later on, neglect of antiseptic lavage of the post-partum uterus was characterised as almost a criminal proceeding.

A recent contribution will show the relative places of the essential and the accidental in producing results. Colonel Edward Munson, of the United States Army, writing in June, 1917, regarding an outbreak of measles among soldiers in a camp under his medical care, points out that, while his belief is that for measles any other disinfection than by

sun and air is unnecessary, he found that he was obliged to issue orders for the soldiers' clothing and equipment to be wetted by a chemical solution, in order to compel the men to spread the articles out in the sun and dry them before they were fit for use. Colonel Munson's experience was that neither officers nor men could be entrusted to carry out orders regarding simple disinfection by air and sun. There was a psychological necessity for the chemical solution.

On the subject of "professional statistics" Baginsky says: "The *value of statistics* in ascertaining the actual permanence of the processes and circumstances in things and in man is beyond all doubt and incontestable, and the less complicated the relations, the more certain and likely will be the results which may be determined from such a compilation, grouping, and addition. On the other hand, the scientific and conscientious statistician knows that on account of the complicating circumstances and relations attending figures, the difficulty of their proper estimation grows, and the results may be far from the actual truth. What can be more complicated than the course of morbid processes in which certain positive factors as to age, weight, social position, the number of affections, etc., are taken into account, but where innumerable other conditions that cannot be mentioned, even unknown circumstances, such as the constitution of the patient, the nature and virulence of the pathogenic agent, the favourable influence of remedies and of physician, as well as faulty observation and reports, and errors in treatment, may also affect the individual case. This renders professional statistics untrustworthy, and in so far as the most simple relations of figures are not taken into calculation, they are faulty, without value, and harmful." He adds: "Only after a very large, almost enormous number of results which include the omissions and errors of individual numbers are observed, is a result attained which approximates the truth. This, above all, renders general statistical reports regarding therapeutic results valueless, and so much inferior to the experience of the faithful observer who notes the minutest details. Hence the useless and detrimental controversy with statistically produced small figures regarding the curative properties of serum therapy. Are the conditions of a single region similar to those of another, or is even one case exactly like another, and even in the same places, under the same physicians, persons, conditions, are the morbid processes exactly similar? Do we not even see in this hospital how the severity of the individual case varies, the children coming to us having entirely different constitutions, their disease and a thousand other conditions varying greatly? But just for this reason the observation of an impartial well-trained physician who watches with open eyes is more valuable than all statistical reports. From this viewpoint, the judgment of serum therapy arising from careful clinical observations of the special case, with all the variations and surrounding conditions, is the only proper one, and the one that comes nearest the truth. This is the reason why we do not turn to the right nor to the left, but singly and alone, holding to our own base of observation, we arrive at our conclusions regarding the curative value of serum therapy, and shall even attain better results."

When the problem comes to be considered in detail one finds that various factors influence the incidence and the death-rate, such as the fallacies arising from inaccurate diagnosis and the inclusion of non-clinical cases of "carriers," and in this connexion one must remember that without cultures—which was the position before Behring's discovery—the chance of error in the diagnosis was said to be 50 per cent. This is a disturbing factor in all statistics before 1883 and for some time after, and it affects all comparisons made between the present and the past in respect to incidence and case-mortality. That it does so, is undoubted. Dr. Herringham, in Allbutt's *System of Medicine*, says that "since the diagnosis has been supplemented by the bacteriological test there is no question that if every patient is said to have diphtheria in whose throat the bacillus diphtheriæ is found, the average severity of the cases will diminish, since many such are, and remain, perfectly well, and would not have been so diagnosed in former times. In comparing statistics, therefore, it is necessary to be certain that the diagnosis rests upon the same grounds in all." So far, when making comparisons, it does not appear that any co-efficient of correction has been worked out, or even any allowance made for errors in the diagnoses previous to Behring's discovery.

(iii) *Influence of Age.* It has often been noted that age has a remarkable effect on the incidence and virulence of diphtheria; but the importance of this in statistics, especially in comparative statistics, has been but little noted.

In the Year-Book for 1859 figures are given from Ballard's investigations. His percentages show the number of deaths per hundred, not of cases but of fatalities.

DIPHTHERIA.—DEATHS IN AGE GROUPS, BALLARD'S INVESTIGATIONS.

Age Group.			Deaths.	Per cent.
Years—				
Under 1	..	..	5	6.25
1-2	..	..	12	15.00
2-3	..	..	11	13.75
3-4	..	..	13	16.25
4-5	..	..	7	8.75
5-10	..	..	19	23.75
10-20	..	..	7	8.75
20	..	..	6	7.50

Summarizing the figures given above yields the following result :—

Age Group.			Deaths.	Per cent.
Years—				
0-5	..	..	48	60.00
5-10	..	..	19	23.75
Above 10	..	..	13	16.25

The numbers involved here are as small as they are in most other similar compilations, but they all point to a distinct difference of fatality in respect to age. The "age periods" that are of most importance for comparison are from 1-5 years, from 5-10, and above 10. For a long time after 1859 it was noted that the 1 to 5 years period showed the largest number of deaths.

It is interesting to consider the causes of death in these cases recorded in 1859. They are set forth thus :—

DIPHTHERIA.—CAUSES OF DEATH, BALLARD'S INVESTIGATIONS.

Cause.	Under 5 Years.	Under 10 Years.	10 Years and upwards.	Period during which death occurred.			
				1 Week.	2 Weeks.	3 Weeks.	4 Weeks.
Laryngeal Affection	17	7	3	18	8	1	..
Exhaustion	13	5	4	7	8	3	4

Commenting on this matter Dr. Squire says in "Reynolds' System of Medicine": "In diphtheria both local and general means of treatment are required; the cure of particular cases may sometimes be attributable to the one and sometimes to the other, but in no case can either be safely disregarded. The general therapeutical indications are of primary importance throughout; they consist neither in attempts to nullify a poison by specifics, nor to expel it by elimination, but in withstanding the encroachment of the disease, and in sustaining the vital powers."

Many series of statistics are now available, and they show that the increased tendency in many, if not most places, is for cases to be transferred from the first or more fatal group to the second or less fatal. The effect of such transference on the conclusions to be drawn from mortality statistics should be evident.

The following table shows the numbers of deaths from diphtheria in South Australia from 1888 to 1920, and their distribution in two groups—under 5 years and 5 years and over. The "transference" of deaths from the first to the second group commenced in 1897-1898, and it is remarkable as regards quantity. During the ten years in the first period, the percentages of the groups were 54.7 and 45.3; during the twenty-three years in the second period, the percentages were 45.8 and 54.2. It would be well if the incidence of the disease, *i.e.*, the number of cases notified in the various years were obtainable from

large series of statistics. These would furnish by far the most accurate and valuable information on the subject of the influence of the age periods.

DIPHTHERIA.—DEATHS IN AGE GROUPS. SOUTH AUSTRALIA, 1888 TO 1920.

Year.				Total Deaths.	Under 5 Years.	5 Years and Over.
1888	..	..	..	139	76	63
1889	..	..	..	109	63	46
1890	..	..	..	174	91	83
1891	..	..	..	173	94	79
1892	..	..	..	106	52	54
1893	..	..	..	100	50	50
1894	..	..	..	97	58	39
1895	..	..	..	37	21	16
1896	..	..	..	21	14	7
1897	..	..	..	22	16	6
1898	..	..	..	38	17	21
1899	..	..	..	40	19	21
1900	..	..	..	32	16	16
1901	..	..	..	19	9	10
1902	..	..	..	27	11	16
1903	..	..	..	21	8	13
1904	..	..	..	18	6	12
1905	..	..	..	7	2	5
1906	..	..	..	12	7	5
1907	..	..	..	13	9	4
1908	..	..	..	8	4	4
1909	..	..	..	14	4	10
1910	..	..	..	40	21	19
1911	..	..	..	65	30	35
1912	..	..	..	58	28	30
1913	..	..	..	78	46	32
1914	..	..	..	57	18	39
1915	..	..	..	72	29	43
1916	..	..	..	144	62	82
1917	..	..	..	87	42	45
1918	..	..	..	86	44	42
1919	..	..	..	82	33	49
1920	..	..	..	87	41	46

The following table gives a summary with percentages of the two age-groups for the periods 1888-97 and 1898-1920, and shows a remarkable reversal of the incidence figures :—

DIPHTHERIA.—DEATHS IN AGE GROUPS, SOUTH AUSTRALIA, SUMMARY 1888 TO 1920.

Period.				Under 5 Years.		5 Years and Over.	
				Total.	Per cent.	Total.	Per cent.
1888-1897 (10 years)	..	..	978	535	54.7	443	45.3
1898-1920 (23 years)	..	..	1,105	506	45.8	599	54.2

(iv) *Susceptibility*.—The “susceptibility” of individuals at various ages, and the relation of this to the mortality and fatality are extremely important factors. This is shown in the following table by Brownlee. He points out that the factors of infectivity and virulence are capable of existing in very different degrees of association. In this connexion the subject of exposure may become a very potent factor in the increase or decrease of mortality.

The accompanying table gives the figures for diphtheria taken from the returns of Manchester. Brownlee says these are chosen as they are the only returns where the actually notified cases and corresponding deaths are distributed in age periods.

DIPHTHERIA.—SUSCEPTIBILITY, MORTALITY, AND FATALITY, MANCHESTER,
1893 TO 1903.

Age Period.				Susceptibility.	Mortality.	Fatality.
Years—						Per cent.
0-1	..	..	..	89	62	69.6
1-2	..	..	..	271	160	59.0
2-3	..	..	..	293	152	51.9
3-4	..	..	..	392	161	41.7
4-5	..	..	..	356	129	36.2
5-6	..	..	..	325	100	30.8
6-7	..	..	..	199	56	28.1
7-8	..	..	..	187	44	23.5
8-9	..	..	..	152	34	22.4
9-10	..	..	..	124	14	11.3
10-15	..	..	..	74	5	6.8
15-20	..	..	..	46	2.1	4.6
20-25	..	..	..	37	1.1	3.0
25-35	..	..	..	29	2.5	8.6
35-45	..	..	..	16	.6	3.8
45-55	..	..	..	9	.4	4.4
55-65	..	..	..	5	..	..

New aspects of susceptibility and immunity have been presented within the past few years. Various factors may contribute to immunity. Immunity would appear to be inherent in some races or persons. The immunity that a person acquires by an attack of the disease may be called a pathological immunity.

Digby, in "Immunity in Health, 1919," says: "It is an arresting fact in medicine that some degree of immunity may be acquired by mere contact with cases of an infectious disease without an obvious attack. This may be called healthily-acquired immunity." Sir James Paget had noted this in 1871 when recording his personal experience of immunity from *post-mortem* infection and the result of his lapse from this acquired insusceptibility. Many surgeons have noted how well town-bred youths bear surgical operations, and how fast they improve during convalescence compared with country-bred subjects in the same wards; and this is observed also in "medical cases."

Colonel Vaughan and Captain Palmer, of the United States Army, undertook an investigation for the purpose of ascertaining why the seasoned soldier is more resistant even to newly-imported infections than the recent recruit, why the men from crowded cities resist these infections transmitted from and to the respiratory tract more successfully than their comrades from sparsely settled areas, and why the rurals fall more ready victims to pneumonia than the urbans. After a critical review of clinical, bacteriological, and epidemic investigations, they said in "The Military Surgeon, 1920," "that the man who has been long accustomed to crowd life, and who has consequently frequently inhaled particulate proteins (bacteria), whether they be pathogenic or non-pathogenic, acquires a non-specific immunity, which helps him in withstanding infection." They point out that this conforms with some of the findings of the Typhoid Commission in 1898, contrary to the beliefs of the members when they began their investigations.

Another important factor must also be considered. Bodley Scott, in "Endocrine Therapeutics, 1922," writes: "It has been proved in human and in animal life that milk is capable of conveying antitoxin substances to the offspring after these have been injected into the mother; this is transmitted immunity, but what is far more important is inherited immunity. Probably all infectious diseases in a civilized people eventually lead to a condition of partial and increasing immunity. This takes place partly *in utero*, but largely through the mother's milk during the first year of the child's life. In

artificially-fed babies this latter immunity-giving power is, of course, absent, and such are far more vulnerable to outside attack."

It may be that age-insusceptibility is co-related with maternal feeding from birth, with exposure to infectious diseases without acquiring them, and with complete recovery from some one or more of such diseases, but statistics on the subject are not available. An examination of susceptibility tables would seem to support the suggestion.

It is of interest in this connexion to note that the London notifications for 1892 to 1912 showed that one-third of the cases of diphtheria were under five years of age, about another third between five and ten, and for each succeeding quinquennium much smaller. The case-mortality was highest in infants under one year. This contrasts strikingly with Ballard's statement in 1859, that "the disease was comparatively rarely fatal to infants in their first year." This was at a time when breast-feeding was the rule.

The reference to food suggests another line of study and investigation. Rendle Short (1922), in a search for a cause in the increase of appendicitis, made a physiological, pathological, and food economic investigation, and found most support for the theory that the increase was due to the use of imported food-stuffs leading to a reduction in the relative quantity of cellulose consumed in the diet. He says, amongst other evidence: "The time-factor is correct. It was between 1895 and 1905 that the foreigner began to feed us, and that we imported appendicitis with his food. Since then, there has been little change in either." In the light of the physiological and pathological facts largely applicable to both diseases, and if the time-factor is correct for diphtheria as for appendicitis, one might find support for the suggestion that a liability to disease arising from diminished powers of resistance on account of lack of proper food elements was at least a possible factor in the increased susceptibility to diphtheria.

The term subepithelial lymphatics has been applied to certain glands in the body, viz., the faucial, lingual, and nasopharyngeal tonsils; the solitary lymphatic nodules of the intestinal tract; Peyer's patches; and the vermiform appendix. In their anatomy, physiology, and pathology, they are closely allied. Digby (1919) says their time of greatest activity corresponds with the period during which the individual is securing immunity against the exanthemata and other infections, and apparently one must correlate these two phenomena—the acquirement of immunity, and the activity of the glands. This activity is exhibited in the attack of scarlet fever, typhoid fever, appendicitis, and diphtheria. In diphtheria, the faucial tonsils are the special defensive organs, the biological barriers against invasion, and they become the portals of entrance of the specific poison when their protective powers fail. The vulnerability of an individual to infective disease is increased by the quality of the food, by functional impairment of the tonsils from recent attack of measles or similar disease, and by surgical removal of the tonsils. Tonsillotomy, it may be noted, began to be a common if not a fashionable operation about 1890.

(v) *Sex.* A table giving age and sex incidence of diphtheria for the County of London during the decennium ending 1903 has been given on an earlier page of this article. The figures in that table may be thus summarized:—

DIPHTHERIA.—DEATHS IN AGE-GROUPS, COUNTY OF LONDON, 1894 TO 1903.

SUMMARY I.

Ages.	Cases Notified.		Deaths.		Percentage Fatality.	
	Males.	Females.	Males.	Females.	Males.	Females.
Years—						
0–5 ..	23,184	22,083	6,407	6,256	27.6	28.3
5–10 ..	16,854	20,328	2,110	2,692	12.5	13.2
10–15 ..	5,865	7,753	309	341	5.3	4.4
Above 15 ..	7,768	13,726	233	303	3.0	2.2

SUMMARY II.—COMBINED SEXES.

Ages.	Cases Notified.	Deaths.	Percentage Fatality.
Years—			
0-5	45,267	12,663	27.97
5-10	37,182	4,802	12.91
10-15	13,618	650	4.77
Above 15	21,494	536	2.49

The abstracts made show the percentage case mortality in the two groups referred to, and would point to the same conclusion as one would draw from Ballard's statistics, though the two sets are not compiled in uniform fashion. Many series of statistics are now available; and they show that the increased tendency in many, if not most, places is for cases to be transferred from the first or more severe group to the second or milder group. Since the recoveries in this second group are more numerous, the effect of this on the conclusions to be drawn will be evident. Herringham, in "Allbutt's System of Medicine, 1905," when dealing with statistics, points out that the treatment elsewhere is not so uniformly successful as it is in London, and says: "It is not to be expected that it should be. Not only are the Board Hospitals magnificently equipped and maintained, but also, as it seems, both the public and the practitioners of London co-operate more promptly with the sanitary authorities than is the case in many towns. This is shown by the early date at which in London the cases are admitted to hospital; " and he draws a contrast between this and the defective administration in Manchester. It does not appear that this recently-introduced extensive and effective organization is estimated by any one as a factor influencing the diphtheria mortality when comparing present and recent statistics with figures of 30 years ago. It may be of interest, however, to note that the existence of legal powers and the commencement of administrative health activity in the control of the various infectious diseases, and the provision for what is universally recognized as the prime and specific necessity for saving life in diphtheria, viz., early treatment, coincided with the introduction and use of antitoxin.

(vi) *Urban and Rural Incidence.* Allbutt's "System of Medicine" states:—"The following table which relates to the quinquennium ended with 1903, shows the varying incidence of mortality from diphtheria and croup in town and country. The figures represent average annual rates per thousand children living under five years, at which age diphtheria is more fatal than at other stages of life.

**DIPHTHERIA AND CROUP.—DEATH RATES PER 1,000 CHILDREN LIVING,
AGE GROUP UNDER FIVE YEARS—ENGLAND, 1899 TO 1903.**

Sex.	Urban Counties.	Rural Counties.
Boys	1.86	0.96
Girls	1.79	0.92
Both Sexes	1.83	0.94

These figures indicate that in recent years the mortality from diphtheria has been much greater in the town than in the country—a distribution which is the opposite of that obtaining in the earlier years of civil registration, when diphtheria was commonly considered to be mainly a disease of the country. It is more than likely that the present excessive fatality of this disease—as well as of most other infectious diseases—in the urban areas is caused by the closer aggregation therein of school children as compared with rural areas. This rural to urban influx is a factor which deserves most careful study. It occurs in many countries. In Australia especially has it to be reckoned with, the massing of population in and around the capitals being proportionately greater than in any other part of the world. The facilities for the transference of infective material by carriers are enormously increased, not only on account of travelling, crowding and over-crowding in conveyances, of aggregations in schools and places of amusement,

but of "improvements" in sanitation in such matters as the providing of toilet requisities which, though good in theory, fail in practice because their insufficiency makes them adjuvants of infection instead of preventives.

(vii) *Influence of Antitoxin.* At the beginning of the antitoxin treatment a committee of the Paris Academy of Medicine reported: "We are now in possession of a specific treatment of diphtheria as powerful as it is harmless." If this meant that complications from the use of antitoxin did not occur, the statement has been belied on every hand. If it meant that it "cured" in every case, experience of the fatality rate is outstanding proof to the contrary. Unfortunately the statement gave rise to a belief that all failures or untoward results were to be explained away or concealed by imperfect and misleading statistics. The test of the comparative efficacy or relative utility of antitoxin must be its effect in every case or every class of case in which it is administered, as compared with other methods under similar conditions; while its absolute utility must be judged by the part it plays in the incidence and mortality of the disease in the general community—a subject which has received little or no attention. It is imperative, then, that in estimating its place and power one should carefully examine the statistics from which inferences have been drawn. In 1895 Sir Malcolm Morris, in "The Practitioner," after referring to the enthusiasm and contradiction that were being exhibited, and warning against statistical fallacies, wrote: "Let us, however, be quite clear as to what antitoxin can, and what it cannot, do. It is essentially an antidote to a specific poison; that is to say, it can neutralize the action of the poison, but it has no effect on the organic changes and functional disturbances caused by the poison. If used in time, antitoxin may, with tolerable confidence, be expected to prevent the occurrence of such changes and disturbances, but it cannot cure them . . . Nor must it be imagined that the antitoxin is an unfailing specific."

In an article in Allbutt's "System of Medicine" the following occurs: "It might be thought that there would be little difficulty in determining whether the antitoxin treatment is successful or not, for it means a simple matter by comparing records to decide whether the fatality of diphtheria is lower when antitoxin is given than when it is not. But it soon becomes clear that for various reasons and in various ways this simple test may prove fallacious. In the first place, since the use of antitoxin has now become universal in hospitals, it is seldom possible to compare two large series of cases treated at the same place at the same time, the one with antitoxin, the other without. There are, however, a few instances in which such a comparison can be made."

The writer, in the course of the article, says: "At the Blegdam Hospital in Copenhagen, Fibiger, under Sorensen's direction, divided cases merely according to the day of admission, treating with serum those admitted on alternate days, while those admitted on the intermediate days were treated without it. The experiment lasted from 13th May, 1896, to 13th May, 1897, and was carried out as arranged, except that toward its close the physicians, who were already driven to the conclusion that the serum had a powerful effect, used it on a few severe cases out of their proper turn. Excluding cases admitted moribund, which died within 24 hours, 483 cases in all were treated, as follows:—

238 with serum, of which 7 died, or 2.94 per cent.

245 without serum, of which 30 died, or 12.2 per cent.

—
Total 483.
—

Of the 238 cases treated with serum—

203 were pharyngeal, of which 4 died, or 2 per cent.

35 were laryngeal, of which 3 died, or 8.57 per cent.

Of the 245 cases treated without serum—

200 were pharyngeal, of which 14 died, or 7 per cent.

45 were laryngeal, of which 16 died, or 36 per cent.

Of the 238 cases treated with serum—

72 had albuminuria.

37 had paralysis.

Of the 245 cases treated without serum—

75 had albuminuria.

36 had paralysis.

It would hardly be possible to find two sets of cases more strictly parallel than these. The total death-rates are small as compared with those of other hospitals because they are calculated without the 'moribund cases,' which always form a large proportion of the total deaths. In both Baginsky's and Fibiger's cases the clinical diagnosis was confirmed by bacteriological investigation."

Besides the smallness of the total death-rates as compared with those of other hospitals, and the exclusion of moribund cases, there are serious defects—the writer omits all reference to the age-incidence, the time at which the various cases came under treatment, and other circumstances which have been proved to be of paramount importance in testing the efficacy of any remedy employed in treatment. One gathers no idea of what "treated without serum" implies. The record he quotes is obviously an example of what Dr. Baginsky has characterized as "professional statistics."

In many cases, the records appear to have their value enhanced by the statement that in all "the diagnosis was controlled by the bacteriological examination"—the writers apparently overlooking the fact that the effect of such diagnosis has been to swell the number by admitting cases that would not have been included in records with which comparison is made.

In the early days of antitoxin, when Katz reported on the treatment in Baginsky's wards, he stated that "the ordinary treatment by sprays, insufflations, etc., was carried on as formerly, and tracheotomy and intubation done when indicated. The cases were grouped into four classes: (a) slight, where the constitutional symptoms are absent or slight, and the membrane is restricted; (b) moderately severe, in which the throat is extensively covered and the glands affected; (c) very severe, when the nose and other parts are involved, and the general symptoms grave; and (d) cases to which septic processes are superadded. Of the first class, there were 47 cases, which all recovered; of 35 of the second, 1 died; the third class had 42, of which 31 recovered and 11 died; while the 4 septic cases all died."

This method of study is much more likely to give indications of the therapeutic value and place of any remedy than the wholesale or indiscriminate use of it without any means of discovering and setting forth accurate information. An examination of all the convalescents with a view to discover the number of carriers relatively to other series without local treatment might have yielded interesting results.

It has been said that the first axiom in the treatment of diphtheria is that there is no specific, that in no other disease are the individualizing powers of the physician tested more severely. Such individualizing powers have been shown in the experiments made by Lennox Browne in a series of cases, and his logical conclusions are noteworthy; but such records are conspicuous by their rarity.

In some records, embracing varied numbers of cases, one finds attempts at classifying the cases and estimating values of methods of treatment by accurate observation and judicious inference; but few recognize that the prime requisite for accurate evaluation is a true control series.

Herringham, in "Allbutt's System" says: "It is unsafe to compare strictly the hospitals of one town with those of another. There may be in their circumstances a difference sufficient to account for a difference in their death-rate. And even in comparing the past with the present rate of one hospital or group of hospitals, it is essential to be certain that there has been no great change in buildings, nursing, or medical attendance during the years included."

A report dealing with Massachusetts about 1919, states: "Sudden death occurred in 5.2 per cent. of the cases. In many instances lack of nursing care was the responsible factor. Another factor in the sudden death group appeared to be the repeated attempts at intubation where, for some reason, the tube was either not properly introduced or else expelled."

In the Medical Annual for 1897 it is recorded: "In connexion with the anti-toxin of diphtheria an important report was published at the beginning of the year—the joint production of the medical superintendents of the various hospitals of the Metropolitan Asylums Board—dealing with the diphtheria cases treated with antitoxin during 1895, and compared with those of 1894—the two years being comparable as to diphtheria

(severity, etc.).” Allowing for the “personal equation” of the various superintendents, the following results may be tabulated as proved from this Report :—

- (1) Great reduction in the mortality of cases brought under treatment on the first or second day of illness, such reduction being specially marked in the laryngeal cases.
- (2) Improvement in the results of tracheotomy.
- (3) The clinical course of the disease slightly improved, as shown by the statistics, *i.e.*, in 1894, 3,042 cases and 902 deaths ; 29.6 per cent. mortality ; in 1895, 2,182 cases and 615 deaths, 28.1 per cent. mortality (46.4 per cent. of the cases treated being under five years of age).
- (4) The earlier the treatment with antitoxin, the better are the results, *e.g.* :—

ANTITOXIN.—RESULTS OF TREATMENT, 1894 AND 1895.

Treatment.					1895 (Antitoxin).	1894 (All Cases).
Treatment commenced on	1st day	..	..	..	11.7% death rate ..	22.5%
..	..	..	2nd ..	..	12.5% ..	27.0%
..	..	..	3rd ..	..	22.0% ..	29.4%
..	..	..	4th ..	..	25.1% ..	31.6%
..	..	..	5th ..	..	27.1% ..	30.8%

It is noticeable that here a comparison is made between different years ; that one set of death-rates refers to antitoxin cases alone, the other not to non-antitoxin cases alone, but to all cases, a method which is obviously defective. It would appear that the earlier treatment with antitoxin is credited with the improvements in the results, despite the fact that from 1859 onwards early treatment, apart from any particular method, was recognized as the great factor making for recovery.

In the Medical Annual for 1898 there is an article which follows up the above and adds the figures for 1896. The writer says : “The importance, however, of the antitoxin treatment is shown in a valuable (second) Report signed by eight (out of nine) medical superintendents of the various hospitals of the Metropolitan Asylums Board, and published during the year, giving an account of the use of antitoxin serum in the treatment of diphtheria during 1896 (*vide* also Medical Annual, 1897, p. 624). Of the total cases, 71.3 per cent. have been treated with antitoxin with the following results—to which are added, for comparison, the cases treated in 1895 (also partly with antitoxin), and those in 1894 (without antitoxin) :—”

ANTITOXIN.—RESULTS OF TREATMENT, 1894 TO 1896.

Day of Disease on which Treatment was Commenced.					Mortality per cent.				
					1896.		1895.		1894.
					All Cases.	Antitoxin Cases.	All Cases.	Antitoxin Cases.	All Cases, No Antitoxin.
First Day	..	..	..	..	4.7	5.2	11.7	4.6	22.5
Second Day	..	..	..	..	12.8	15.0	12.5	14.8	27.0
Third Day	..	..	..	..	17.7	21.9	22.0	26.2	29.4
Fourth Day	..	..	..	..	22.5	27.8	25.1	33.1	31.6
Fifth Day and after	..	..	..	..	24.6	31.7	27.1	35.7	30.8
Total	..	..	..	..	20.8	25.9	22.5	28.1	29.6
Tracheotomy Cases	..	..	..	..	41.0	40.6	..	..	70.4
Laryngeal Cases	..	..	..	..	29.6	28.8	..	..	62.0
Post-Scarlatinal Diphtheria	..	..	..	..	5.0	5.9	..	..	..

The same logical fallacies are evident here as in the former report.

Some examples may be given of statistics recorded in generally accepted authoritative works on the subject of diphtheria. The following is extracted from an article by Dr. Goodall in the second edition of the *Encyclopædia Medica*: "Before we proceed to discuss the question of the usage of the serum in the human subject we must draw attention to one very important point in the experimental evidence. It has been found that if an interval be allowed to elapse between the injection of the toxin, and subsequently the antitoxin, into a susceptible animal, then the longer the interval the less effectual will be the action of the antitoxin, and, finally, there comes an occasion when the interval has been made too long, and the antitoxin is injected too late to prevent the lethal effects of the toxin." Hence, it was predicted by Behring that the success of the treatment would be found to depend very largely upon the earliness of its application. Clinical evidence has amply borne out this prediction. The following figures, illustrative of this point, are taken from the Statistical Reports of the Metropolitan Asylums Board:—

ANTITOXIN AND NON-ANTITOXIN TREATMENT, 1894 TO 1897.

Day of disease upon which patient was admitted (1894) or brought under antitoxin treatment (1895-97). ^(a)	1st.	2nd.	3rd.	4th.	5th and later.
Non-antitoxin cases, 1894; all the hospitals—					
Cases	133	539	652	566	1152
Deaths	30	146	192	179	355
Mortality	22.5	27.0	29.4	31.6	30.8
Antitoxin cases, all the hospitals (1895-96); with Brook and Eastern Hospitals only for 1897—					
Cases	209	1126	1313	1332	2436
Deaths	8	137	275	376	780
Mortality	3.8	12.1	20.9	28.2	32.0

(a) No further statistics illustrative of this point and relating to all the hospitals were published by the Asylums Board till the year 1911. It was found that for that year the mortality for each day was as follows:—1st, 2.6; 2nd, 3.4; 3rd, 8.9; 4th, 12.5; 5th and later, 13.4. These figures related to 3,864 cases.

The 1894 figures refer to the day of the disease on which the patient was admitted, and to all the hospitals, and to non-antitoxin cases. The figures for 1895-96 refer to the day on which the patient was brought under antitoxin treatment, and to all hospitals, with Brook and Eastern Hospitals only for 1897. In view of the number of conditions which must be considered in estimating the place and power of any factor in treatment, these statistics are not such as to furnish accurate conclusions to the statistician. And yet these statistics of the Metropolitan Asylums Board are received and quoted as the most trustworthy on the subject.

(viii) *Summary of Present Position.*—In the Medical Annual for 1901 reference is made to a statistical study (locality not mentioned) by Dr. J. E. Herman, in these terms: "In view of the fact that in late years there has been a decline in the death-rate of other infectious diseases than diphtheria, against which no new remedy has been directed, he announces the failure of antitoxin in the treatment of diphtheria."

The article then states that Dr. William P. Munn reaches a different conclusion, founded on statistics of antitoxin treatment in Denver, Col., during five years 1895-1899, in which Denver had almost half as many cases of diphtheria as during six preceding years, but with one-sixth as many deaths from the disease.

The following occurs in the U.S. Public Health Reports, Vol. 34, No. 20: "In their weekly Bulletin of March 15, the New York authorities call attention to the fact that, although there had been a continuous reduction in the death rate from diphtheria, 'the mortality from this disease is still much higher than it should be, when we consider the armamentarium at hand for preventive and curative work.' In New York City, despite

the excellent results of antitoxin treatment, diphtheria still causes over 1,000 deaths annually, approximately 20 per 100,000 population. Rates only a little less than this prevail in Rhode Island, Pennsylvania, Kentucky, North Carolina, Massachusetts, and Michigan." It is pointed out that during the period 1891 to 1900 there were 17,845 deaths from diphtheria in the city of New York among persons under fifteen years of age, and 81.5 per cent. of these were under five, and that efforts to effect further reduction in diphtheria mortality should manifestly, therefore, be mainly centred on the latter age group. There is a recognition here that other factors than antitoxin are concerned in the reduction of mortality rates.

In 1907, Rubner called attention to the increasing incidence and malignity of diphtheria, his knowledge being gained by inquiry among German Medical Officers of Health. He says: "The result was that in our province, in the Empire, and also in the majority of the large towns and districts the disease is neither diminishing nor even stationary, but that an obvious and, in some districts, alarming increase is apparent; and the disease continued to show a manifest inclination to such an increase among us also, even as late as May, 1912. Nor can local causes for a spontaneous decline of diphtheria be discovered."

In Chicago, from 1912 to 1916 inclusive, 6,817 patients were admitted to the State Hospital. Of these 834 died—case mortality was approximately 12 per cent. The number of patients under treatment in 1916 was about 200 greater than in 1912, which indicates a marked increase in the prevalence of diphtheria in Chicago at that time. The recorder notes that few cases occurred in the coloured race, the negro being relatively immune to diphtheria.

Carey states in the Boston "Medical and Surgical Journal," 1919, that "with an average of 6,500 or more cases being reported yearly, with approximately a 10 per cent. fatality, we cannot in truth say that we are progressing with endemic diphtheria" . . .

These are examples that set forth the conditions that obtain generally throughout the world regarding the increase in incidence of diphtheria and the loss of life in various communities, a loss which is not decreasing, and which presents one of the most difficult problems in present-day medicine.

11. Carriers.—(i) *General.* The subject of the diphtheria carrier does not belong exclusively to the present day, nor does it date only from yesterday. It was recognized more than half a century ago. It is referred to by Dr. Squire in Reynolds' System of Medicine, 1866.

An individual may show the presence of diphtheria bacilli in his throat, and soon after may suffer from the disease. He is termed an "incubationary carrier." Another, who has recently recovered from the disease, may exhibit bacilli either constantly or intermittently. He is termed a "convalescent carrier." Persons who have been exposed to infection may show the constant or intermittent presence of bacilli without contracting the disease. Such are termed "contact carriers." The condition is explained by the supposition that the bodily state is such that it can resist the effects of the toxic material manufactured by the germs locally in the throat; and such resistance may continue temporarily or indefinitely. Without discussing the subject of the virulence or non-virulence of the bacilli in carriers, one may assume for administrative purposes that all persons with such "localized" bacilli are possible disseminators of disease. The healthiest looking carriers may spread germs of the most virulent sort. The question of what is to be done to prevent dissemination is perhaps the most pressing and the most difficult problem of the day connected with the control of diphtheria. Antitoxin, no matter how administered during or after recovery from the disease, has no effect on such bacilli.

The discovery of carriers is not difficult. Susceptible individuals may easily be discovered and presumably protected; and it might be thought that control would be easy. Henry J. Nichols, in "Carriers in Infectious Diseases, 1922," says, however, that practically the programme usually breaks down because it is too big; and he gives cogent reasons in support of his statement.

(ii) *Convalescent Carriers.* With convalescence, the bacilli begin gradually to disappear, and, by the end of a month, 85 per cent. of convalescents are bacteriological recoveries. By the end of a second month, 98 per cent. are free. The remainder pass into the most dangerous class of more or less chronic carriers.

(iii) *Contact Carriers.* Pure contact carriers occur among attendants, families, and contacts of cases, and carriers in from 10 to 20 per cent. of instances. The organisms are virulent in 80 per cent. of instances, and the carriers are dangerous, but the condition is temporary unless there is some predisposing deformity of a chronic focus. These carriers are immune or "Schick negative."

(iv) *Proportion of Carriers to Population.* In the general population, true carriers of virulent organisms are less than 1 in 1,000. Among children, however, 2 per cent. are true carriers. Only 10 per cent. of non-contact or non-convalescent carriers show virulent organisms. [The statements in (ii), (iii), and (iv) are made on the authority of Nichols.]

The following table by Chapin sets forth the results of an examination of all the wage earners in the families at the time the cases were reported, and of all the members of the family for release, that is, to determine the end of isolation. Chapin also gives statistics of a large number of examinations in schools in America, Great Britain, and the Continent of Europe.

**DIPHTHERIA.—NUMBER AND PERCENTAGE OF CARRIERS, PROVIDENCE,
U.S.A., 1897 TO 1901.**

Ages.				Persons Examined.	Number of Carriers.	Percentage of Carriers.
Under 1 year	..	.	..	119	17	14.2
1 year	..	..	..	112	15	13.3
2 years	..	..	..	97	23	23.7
3 "	..	..	..	112	25	22.3
4 "	..	..	..	116	31	26.7
5 "	..	..	..	120	17	14.1
6 "	..	..	..	137	42	30.6
7 "	..	..	..	130	30	23.1
8 "	..	..	..	119	25	21.0
9 "	..	..	..	113	23	20.3
10 "	..	..	..	139	26	18.7
11 "	..	..	..	79	11	13.9
12 "	..	..	..	127	28	22.0
13 "	..	..	..	86	15	17.4
14 "	..	..	..	88	13	14.7
15 "	..	..	..	70	5	7.1
16 "	..	..	..	64	9	14.0
17 "	..	..	..	57	9	15.7
18 "	..	..	..	57	6	10.5
19 "	..	..	..	45	4	8.8
20 "	..	..	..	34	4	11.7
Adults	..	..	..	2,505	277	11.0
Totals	..	..	..	4,526	655	14.4

At the Fifteenth International Congress at Washington in 1912, Dr. W. Lorenzo Moss stated that the problems urgently demanding solution were: "1. May avirulent diphtheria bacilli become virulent, and under what conditions? 2. Under what conditions may virulent diphtheria bacilli cause clinical diphtheria? 3. How may the sterilization of diphtheria-bacillus carriers be accomplished?" He says that "until these problems have been solved, or, at least, until the solution of the third one has been accomplished, we are scarcely in a position to deal with the healthy diphtheria-bacillus carrier. This, of course, does not mean that the rigorous measures usually adopted against cases of clinical diphtheria should be relaxed."

(v) *Treatment of Carriers.* The isolation of "carriers" is allowed to be impracticable. The part they play in the spread of the disease, directly and indirectly, is becoming more and more recognized; and they are being regarded as a most important means of

conveying infection. The significance of this is obvious when one considers that in the social conditions of to-day a person may be more likely to spread infection to another country or continent than half a century ago he would have been liable to infect a person in the next parish.

There has been a good deal of investigation into the carrier question both generally and experimentally by Shick-testing and immunizing with antitoxin, toxin-antitoxin, avirulent bacilli and other substances; but, although there has been much discussion, there is no consensus of opinion as to what administrative measures would be justifiable, practicable, or efficient in dealing with "carriers" in a general community.

(vi) *Place of Schools in the Control of Diphtheria.*—For a time the part played by schools in the dissemination of diphtheria was doubtful. It had been noted that the greatest number of deaths occurred among children under school age; but the question was raised whether these received the infection from school, or whether they were the source of the school infection. It was held that among older children the school played a large part in the spread of the disease. The facilities that a school gives for the spread or the check of an epidemic will depend largely on the amount of attention of a sufficiently skilled nature that can be given to the children both in school and at home, on the facilities for detection and isolation of sufferers, on the discovery and exclusion of carriers, and on prompt and effective measures of disinfection. Cities should be more favourably situated in respect to these matters than country places, but if precautions are neglected, the facilities for spread will, on the other hand, be so much the more multiplied. There have been so many opportunities of estimating the effects of varied experience in various classes of circumstances that there is not much difficulty in deciding what method will promise the best results in any given case—provided always that all the circumstances are known, and that all the measures recommended for control are promptly taken and minutely carried out.

(vii) *The Diphtheritic Membrane.* On a review of the clinical observations on the action of antitoxin, and statistical evidence on the subject, it would appear that the diphtheritic membrane may be the crux of the problem. The presence of the membrane has a twofold effect on the patient: (a) it makes the acts of breathing and swallowing difficult, and so interferes with respiration and nutrition; and (b) it exhausts the patient by the efforts made to resist the local applications for relief. Antitoxin, on the other hand, not only improves the general condition of the sufferer, but makes local applications unnecessary, or less necessary, and so conserves the patient's strength and at the same time allows the free administration of nourishment and stimulants. But, as contrasted with this, it has no effect on the presence of the bacilli in the throat during or after convalescence, and so allows the patient to remain in a condition to mingle freely with others, and to be a possible or actual cause of the spread of the disease. In the light of recent findings it would appear that local treatment of the membrane by destroying the bacilli had a double effect: it checked the supply of the toxin to the patient's system, and it prevented the spread of infection by the bacilli from the patient to others during and after the attack.

12. The Problem of Eradication.—About five years ago the Massachusetts State Department of Health made a statistical study of 1,000 deaths due to diphtheria in order to find the causes and, if possible, to remedy them, being "deeply concerned by the apparent apathy of physicians and organized health agencies towards the failure of the morbidity to decline, while the mortality rate has been so markedly reduced by the use of antitoxin." The private practitioner has no professional or pecuniary interest in the eradication of communicable disease. He is not a philanthropist. The officer of health and his employers as a corporate body may have such an interest if the expenses of control or eradication fall on them. But the interests of the family physician and the officer of health are not as yet identical or even similar. It is sometimes said that they are diverse or antithetical. Even commercial considerations of sorts are not entirely foreign to the diphtheria problem. If these things are so, it would not be an unwarranted inference that while antitoxin reduces the case mortality, it may be a powerful factor in the increased incidence of the disease. It should not be impossible, or even difficult, to conduct a series of test experiments that would furnish trustworthy information on this crucial question.

CHAPTER XXVI.

MISCELLANEOUS.

§ 1. Patents, Trade Marks, and Designs.

1. **Patents.**—(i) *General.* The granting of patents is regulated by the Commonwealth Patents Act 1903–16, which, in regard to principle and practice, has the same general foundation as the Imperial Statutes, modified to suit Australian conditions. The Act is administered by a Commissioner of Patents. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth and the Territories of Papua and New Guinea, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees, as may be allowed.

(ii) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed.* The number of separate inventions in respect of which applications were filed during each year from 1918 to 1922 inclusive is given in the following table, which also shows the number of patents sealed in respect of applications made in each year.

PATENTS, COMMONWEALTH.—SUMMARY, 1918 TO 1922.

Year	1918.	1919.	1920.	1921.	1922.
No. of applications	3,543	4,166	5,481	5,072	5,431
No. of applications accompanied by provisional specifications	2,405	2,468	2,875	3,378	3,643
Letters patent sealed during each year	1,130	1,452	2,033	2,573	3,273

(iii) *Revenue of Patents Office.* The revenue of the Commonwealth Patents Office for each year from 1918 to the end of the year 1922 is shown in the subjoined table :—

PATENTS, COMMONWEALTH.—REVENUE, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Fees collected under—					
States Patents Acts ..	15	4	31	5	4
Patents Acts 1903–16 ..	16,223	19,764	27,100	28,516	30,912
Receipts from publications	317	414	417	385	561
Total	16,555	20,182	27,548	28,906	31,477

2. **Trade Marks and Designs.**—(i) *Trade Marks.* Under the Trade Marks Act 1905, the Commissioner of Patents is also Registrar of Trade Marks. This Act has been amended from time to time, the last amendment having been made in 1922. Special provisions for the registration of a “ Commonwealth Trade Mark ” are contained in the

Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that the conditions as to remuneration of labour in connexion with the manufacture of such goods are fair and reasonable.

(ii) *Designs.* The Designs Act 1906 as amended by the Patents, Designs and Trade Marks Act 1910, and the Designs Act 1912, is now cited as the Designs Act 1906–12. Under this Act a Commonwealth Designs Office has been established, and the Commissioner of Patents appointed “Registrar of Designs.”

(iii) *Applications for Trade Marks and Designs.* The following table gives particulars of applications for trade marks and designs received and registered under the Commonwealth Acts from 1918 to 1922 inclusive :—

TRADE MARKS AND DESIGNS, COMMONWEALTH.—SUMMARY, 1918 TO 1922.

Applications.			1918.	1919.	1920.	1921.	1922.
RECEIVED.							
Trade Marks	..	..	1,739	2,634	3,045	2,410	2,763
Designs	..	..	262	256	278	357	427
REGISTERED.							
Trade Marks	..	..	1,095	1,229	1,651	2,542	1,991
Designs	..	..	223	203	226	300	380

(iv) *Revenue of Trade Marks and Designs Office.* The following table shows the revenue of the Trade Marks and Designs Office during the years 1918 to 1922 :—

TRADE MARKS AND DESIGNS, COMMONWEALTH.—REVENUE, 1918 TO 1922.

Particulars.	1918.			1919.			1920.			1921.			1922.		
	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Fees collected under State Acts	14	..	..	192	..	..	9	..	..	1	..	..	1	..	..
Fees collected under Commonwealth Acts	4,330	318	114	5,314	346	101	12,607	368	107	10,557	427	122	9,282	499	131
Total	4,344	318	114	5,506	346	101	12,616	368	107	10,558	427	122	9,283	499	131

§ 2. Copyright.

1. *Legislation.*—Copyright is regulated by the Commonwealth Copyright Act of 1912, details of which will be found in previous issues of the Official Year Book (see No. 8, p. 1066), while, subject to modifications relating to procedure and remedies, the British Copyright Act of 1911 has been adopted as law and declared to be in force within the Commonwealth.

Reciprocal protection was extended in 1918 to citizens of Australia and of the United States under which copyright may be preserved in the latter country by registration at the Library of Congress, Washington. The Commonwealth Government promulgated a further Order in Council which came into operation on the 1st February, 1923, and extended the provisions of the Copyright Act to the foreign countries of the Copyright Union, subject to the accomplishment of the conditions and facilities therein contained.

2. Applications and Registrations.—The following table gives particulars of applications for copyright received and registered, and the amount of revenue received for the years 1918 to 1922 :—

COPYRIGHT, AUSTRALIA.—SUMMARY, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Applications received—					
Literary No.	816	923	922	953	1,027
Artistic No.	261	216	203	146	185
International No.	4	1	..	5	14
Applications registered—					
Literary No.	750	850	879	809	942
Artistic No.	232	197	185	138	160
International No.	3	..	..	4	..
Revenue £	309	284	287	292	312

§ 3. Local Option, and Reduction of Licences.

1. General.—Local option concerning the sale of fermented and spirituous liquors is in force in all the States, the States being divided into districts generally conterminous with electoral districts, and a poll of the electors taken from time to time in each district regarding the continuance of the existing number of licensed premises, the reduction in number, or the closing of all such premises. Provision is made for giving effect to the results of the poll in each district in which the vote is in favour of a change.

2. New South Wales.—Under the Liquor Act of 1912, provision was made for taking a vote of the electors on the parliamentary rolls on the question of continuance of existing licences, the reduction of the same, or that no licence be granted of public houses, wine-shops and clubs. The polling was to take place simultaneously with that for a general election. Three such polls were taken, but in 1919, by an amending Act, further taking of polls was suspended pending a referendum on the question of prohibition, which was to have been taken within eighteen months after the passing of the amending Act. This referendum has not yet been held. Other clauses of the 1919 amendment provided for the establishment of the Licences Reduction Board and the Compensation Assessment Board, the former to determine the amount of compensation to be paid in cases where cancellations are recommended, and to fix the compensation fees to be paid by licensees; and the latter to assess the cost to the State for compensation if prohibition be carried. Compensation is made from a fund into which fees are paid by licensees, the amount being 3 per cent. of the value of all liquor purchased during the preceding year. Up to the 4th April, 1923, 68 licences were withdrawn in the Sydney electorate, 23 in the Newcastle electoral district, and 108 in other country electoral districts, the respective amounts of compensation awarded being £45,650, £29,470, and £87,380. The balance of the Compensation Fund at the 31st March, 1923, was £419,673; of which a sum of £12,210 remained to be paid. In 85 cases compensation has not yet been awarded, and 49 hotels have been closed by other than the Board's action. Five wine licences, for which compensation has not yet been awarded, were withdrawn in other country electorates.

3 **Victoria.** (i) *Local Option.* Under the Licensing Act of 1922, the previous system of local option was abolished, and provision was made for a vote of the electors for the Legislative Assembly to be taken once in every eighth year, the first of such votes to be taken in the year 1930. The resolution to be then submitted is :—" That licences shall be abolished." If that resolution is carried, the following resolution shall be submitted to the electors at each subsequent vote, until carried :—" That licences shall be restored." This provision makes the vote State-wide instead of being restricted to the individual licensing districts.

The Act also prescribes that each licensing district shall consist of an electoral district, instead of the subdivisions which under the previous Acts formed licensing districts. The Licensing Court is also empowered to reduce the number of licences (i.e., victuallers' licences, grocers' licences, Australian wine licences, spirit merchants' licences, and registered clubs) which in its opinion is greater than the number necessary for the convenience of the public or the requirements of the locality ; such reduction, however, is not to exceed one-fourth of the number of licences of each description which the Court was empowered to renew in the licensing district at the commencement of the Act, nor shall it exceed the extent to which there are moneys available for compensation in the Licensing Fund.

(ii) *Licences Reduction Board.* This Board was established in 1906 with power to reduce the number of licensed victuallers' premises in districts in which there were more than the statutory number of licences. It has also the duty of fixing and awarding compensation to the owners and licensees of closed hotels. The compensation fund is derived from vendors of liquor who must all pay in proportion to the benefit they derive from their licences. The amount charged to the wholesale trade is 4 per cent. of the cost of all liquors sold to non-licensed persons, no charge being made on sales to other licensed vendors. The retail trade is charged 6 per cent. on liquor purchases, except the holders of Australian wine licences, who are charged 4 per cent. The expenses of operating the Licensing Act are a charge on the Compensation Fund, and, in addition, £23,000 is paid annually to the Police Superannuation Fund, and £68,000 to the municipalities which formerly granted licences. The balance is available for compensation purposes.

The maximum compensation, so far as victuallers' licences are concerned, is now governed by the trading results for the ten years ending on the 31st December, 1916, and that payable to any of the holders of other licences is based on the loss accruing on a lease for a period not exceeding three years. In fixing the amount, allowance must be made for the percentage fees paid in respect of the licence for the three years following the passing of the Licensing Act 1916.

Under the 1922 Act, the Court has held deprivation sittings in three licensing districts and has ordered that twenty victuallers' licences shall not be renewed at the end of the current year. When the Board came into existence in 1906, the number of licensed premises was 3,521, of which 73 were roadside victuallers', and up to the 30th June, 1922, the number closed was 1,510. The following table gives the total number of hotels deprived of licences, or which have had their licences surrendered, and the amount of compensation awarded in each case to the owner and licensee :—

LICENCES REDUCTION BOARD.—VICTORIA, 30th JUNE, 1923.

Districts.	Hotels Delicensed.	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.		Total Com- pensation Awarded.
		Owner.	Licensee.		Owner.	Licensee.	
	No.	£	£	No.	£	£	No.
Metropolitan and Suburban ..	413	304,497	66,893	19	9,673	2,734	383,797
Country ..	722	309,783	53,432	(b) 356	96,028	11,796	471,039
Total ..	(a) 1,135	614,280	120,325	375	105,701	14,530	854,836

(a) Including 20 metropolitan victuallers' licences deprived, but not awarded compensation.
(b) Including 7 roadside licences.

In addition to the above closings, there have been taken away under the local option vote the following licences :—one Australian wine, one club, four grocers', and five spirit merchants', and under the 1922 Act, two spirit merchants' and two grocers' licences have been taken away, and two Australian wine licences surrendered.

(iii) *Mallee Licences.* Under the 1916 Act special provisions were made for the granting of victuallers' licences in the Mallee, and by the 1922 Act, these provisions, as amended by that Act, are extended to any area outside the Mallee country proclaimed for the purpose. Power is given to proclaim areas containing 500 resident electors, when petitions signed by a majority of the residents are lodged, and where the Licensing Court, after inquiry, recommends this course. On the proclamation of an area, a poll of the electors is to be taken, at which, if the poll is to be recognized, one-third of those enrolled must vote. A majority of those voting decides whether a licence is to issue or not. The annual value by which such licence adds to the annual value of the land and buildings is to be fixed by the Court, and the amount so fixed is to be paid by the licensee into the Licensing Fund. Under these provisions, nine areas have been proclaimed, in six of which polls were taken and resulted in favour of licence. Licences have now been granted in six such areas.

4. *Queensland.* (i) *Local Option.* Local Option is regulated in Queensland by the Liquor Act of 1912, as amended by the Liquor Act Amendment Act of 1920. A vote on the question is to be taken on the request of one-tenth of the number of electors in an area, which is defined in the request, and such area may be (a) an electoral district, or (b) an electoral division of an electoral district, or (c) a group of two or more divisions of an electoral district, provided that the whole of such local option area is wholly comprised within one and the same electoral district. A separate request is necessary for each resolution on which a vote is to be taken. The resolutions on which a vote may be taken are :—(a) that the number of licences in the area be reduced by one-fourth of the existing number, (b) that the number of licences be further reduced by one-fourth of the number existing when resolution (a) was carried, (c) that the number of licences be still further reduced by one-fourth of the number existing when resolution (a) was carried, (d) that the sale of intoxicating liquors in the area shall be prohibited, and (e) that new licences may be granted in the area. Any resolution shall be carried if at least 35 per cent. of the electors of the area have voted and if, in the case of resolutions (a), (b), or (c) the majority of votes has been given in favour of the resolution, or, in the case of resolutions (d) or (e), at least three-fifths of the votes have been given in favour of the resolution.

Provision is made by the amending Act of 1920 under which every local option vote must be taken in the month of May in every third year on a day to be fixed by the Governor in Council, but no vote may be taken on the same day as the State General Election or a Commonwealth General or Senate Election, and every request must be made before the first of December in the year next preceding the year in which the local option vote is to be taken.

The last polls were taken in 1919, in which year there were eleven on the question of increase or new licences, and one on the question of reduction of licences. Increase was carried in five areas, but in two of these a sufficient number of electors did not vote. The poll in one area resulted in a majority against reduction.

For the next polling on Saturday, 26th May, 1923, thirteen requests have been received by the Home Secretary, and the voting will be on the question of increase or new licences.

(ii) *State Management, Prohibition, or Continuance of the Present System.* The Liquor Act Amendment Act of 1920 provides that a poll shall be taken of the electors of every electoral district every three years on the following resolutions :—(a) State management of manufacture, importation, and sale of fermented and spirituous liquors ; (b) prohibition of manufacture, importation, and retail of fermented and spirituous liquors, to take effect in July, 1925 ; (c) continuance of the present (or if (a) or (b) has been carried, return to the earlier) system of manufacture, importation, and retail of fermented and spirituous liquors.

The first poll was taken in October, 1920. Voting was compulsory under a compulsory preferential system, and State management was everywhere defeated. In

fourteen areas majorities were recorded for (b), and in fifty-eight areas continuance was carried, with a majority for the whole State of 38,092 votes. The second poll will be held in October, 1923.

5. South Australia.—In this State the subject of local option is regulated by Part VIII. of the Licensing Act 1917. Under this Act, each electoral district for the House of Assembly is constituted a local option district, and each electoral district may, by proclamation of the Governor, be divided into local option districts. A quorum of 500 electors, or of one-tenth of the total number of electors—whichever is the smaller number—in any district may petition the Governor for a local option poll. The persons entitled to vote are those whose names appear on the electoral roll and who reside in the local option district. A local option poll is taken on the same date as a general election. The resolutions to be submitted are—(a) that the number of licences be reduced; (b) that the number of licences be not increased or reduced; and (c) that the Court may in its discretion increase the number of licences. No polls have been taken since 1915.

In order to settle any doubt as to the validity of the proclamation of 1917 relating to local option districts, an Act was passed in 1922 by which such proclamation was declared to be valid, and the local option resolutions in force in old districts at the time of the proclamation were declared to be still in force, notwithstanding any alterations in the boundaries of the districts.

6. Western Australia.—(i) *General.* By an Amending Act No. 39 of 1922, the Local Option provisions of the Licensing Act 1911 were repealed, and in lieu thereof a Licences Reduction Board is to be constituted, and charged with the duty of reducing the number of licences throughout the State over a period of six years from 1st January, 1923, to the extent of the money for the time being to the credit of a fund to enable compensation to be paid to the lessors and licensees of premises deprived of a licence. The fund is formed by a levy of 2 per cent. per annum on the amount of liquor purchased for licensed premises, excluding duties thereon. The Licensing Magistrates (three in number) having jurisdiction throughout the State constitute the Reduction Board. Owners and licensees must be summoned before the Board to show cause why their premises should not be deprived of a licence; and in determining which licences shall cease to be in force the Board must consider the convenience of the public and the requirements of the locality, and subject thereto the character and accommodation afforded by the licensed premises, the manner in which the business has been conducted, and the distance between the premises and other licensed premises nearest thereto. Subject to the foregoing considerations, regard must be paid to convictions of the licensee within the preceding three years for offences against the licensing laws. The determination of the Board to deprive any premises of a licence is final; and on payment or tender of compensation the licence becomes void at the expiration of the current period for which it is granted. Compensation to an owner for the diminution in the value of the premises is limited to the difference in the rental value for three years; and to the licensee to the amount of net profits for two years, based on the average of the three years next preceding notice of deprivation. Provision is made to enable the lessee of premises deprived of a licence to surrender the lease, or require the rent to be adjusted by arbitration. Provision is also made for an apportionment between lessor and licensee of the contribution to the compensation fund, if the Board thinks fit.

(ii) *Prohibition.* In addition to the above provisions, the Act of 1922 provides that in the year 1925 and in every fifth year thereafter on a day to be fixed by proclamation a poll shall be taken in each electoral district as to whether prohibition shall come into force. It also provides that where prohibition has been carried and is in force the proposal shall be that the licences for sale of intoxicating liquor be restored. Every person entitled to vote at an election of members of the Legislative Assembly is entitled to vote at the poll. The proposal is carried if three-fifths at least of the number of votes given throughout the State are in favour thereof, provided that it shall not be carried unless 30 per cent., or more of the number of Assembly electors throughout the State vote for the proposal. If prohibition comes into force it takes effect at the expiration of the year in which the

vote was taken, and all licences for the sale of intoxicating liquor cease, and the registration of all clubs is annulled, and until licences are restored no licences may be granted or certificates of clubs be registered. Nothing, however, shall prohibit the sale of alcoholic liquor for use in arts or manufacture, or for medical, scientific, sacramental or industrial purposes. Where a resolution of prohibition is carried, no compensation will be payable to any person whomsoever. The poll shall not be taken on the same day as elections for the Legislature.

7. **Tasmania.**—(i) *General.* In this State the subject of Local Option is dealt with in Part V. (Sections 39 to 53) of “The Licensing Act 1908” as amended by the “Licensing Act 1917”. The provisions of Part V. of the Act of 1908 did not come into force until 1st January, 1917. It was thereby provided that a poll of ratepayers was to be taken in each city, and in each municipality in which more than one licensed house was situate, once in every third year. The most recent polls taken were in the years 1920 in Hobart and Launceston, and in 1921 in other municipalities. The resolutions submitted at the polls in accordance with the Act were (a) for continuance of the existing number of licences, (b) for reduction in such number. The Act provided that a resolution was carried if a majority in number of the votes was given in favour thereof, provided that such resolution should not be carried unless 25 per cent. or more of the number of the electors on the roll voted upon such resolution. In neither of the cities (Hobart and Launceston) was either resolution carried, the statutory proportion of the electors not having voted at either poll. In one municipality only was the resolution for reduction carried. In two municipalities resolutions for continuance were carried. In each of the remaining 37 municipalities in which polls were taken, the statutory proportion of electors failed to vote, and accordingly no resolution was carried.

(ii) *Results of Polls.* The following table shows the results of the Local Option Polls taken in each of the cities (Hobart and Launceston) in December, 1920, and in the municipalities in April, 1921 :—

LOCAL OPTION POLLS.—TASMANIA, 1920 AND 1921.

Poll taken at—				Electors on Roll.	Votes for Continuance.	Votes for Reduction.	Informal Votes.
				No.	No.	No.	No.
Hobart	..	..	..	11,147	499	1,498	62
Launceston	..	..	..	6,041	535	1,242	106
Municipalities	..	..	..	37,140	4,097	4,058	379
Totals	..	..	..	54,328	5,131	6,798	547

§ 4. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island, in latitude 31° 30' south, longitude 159° 5' east. It was discovered in 1788. The total area is 3,220 acres, the island being 7 miles in length and from $\frac{1}{2}$ to $1\frac{3}{4}$ miles in width. It is distant 436 miles from Sydney, and in communication therewith by monthly steam service. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2,840 feet. The climate is mild and the rainfall abundant, but on account of the rocky formation only about a tenth of the surface is suitable for cultivation.

2. **Settlement.**—The first settlement was by a small Maori party in 1853 ; afterwards a colony was settled from Sydney. Constitutionally, it is a dependency of New South Wales, and is included in the electorate of Sydney. A Board of Control manages the affairs of the island and supervises the palm seed industry referred to hereunder.

3. Population.—The population at the Census of 3rd April, 1921, was 65 males, 46 females—total 111.

4. Production, Trade, etc.—The principal product is the seed of the native or *Kentia* palm. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 5. Commercial and Industrial Bureau of the Board of Trade.

1. Initiation.—The initial step towards the creation of a trade promotion organization was taken in February, 1918, when the Prime Minister called a conference of the various associations connected with primary industries, manufactures, and commerce. On behalf of the Commonwealth Government the Prime Minister undertook to provide somewhat similar machinery to that set up by Governments of other countries with the object of co-operating with producers, manufacturers, and merchants in the improvement of methods and the finding of profitable markets. The proposals of the Government were endorsed by the conference, and the Bureau of Commerce and Industry was initiated, and, under the charge of a Director, attached to the Department of Trade and Customs.

Associated with the first Director, in an honorary capacity, there was a temporary general council containing representatives of the primary producers, the Associated Chambers of Manufactures, the Associated Chambers of Commerce, together with representatives of the banking, shipping, metals, coal and timber interests, and the Commercial Travellers' Association. The first Director resigned in March, 1919, and the new Director was later on appointed a member of the Board of Trade, and the Bureau of Commerce and Industry, as it was then termed, was merged into that body, under the title of "The Commercial and Industrial Bureau of the Board of Trade." The direction of the Bureau was assumed by the Board of Trade, and the temporary general council ceased to function.

2. Functions.—The functions of the Bureau now closely resemble those of the Departments of Trade of Great Britain and of the Bureau of Foreign and Domestic Commerce of the United States of America, the two latter, in their present form, being comparatively recent creations. The aim of the Bureau is to foster and develop the foreign and domestic commerce, the manufacturing industries, and the transportation facilities of Australia.

Amongst its duties also are the direction of the work of the Trade Commissioner for the East, and the investigation of markets for Australian products. In fulfilling its prime function of assisting commerce and manufacturing, the Bureau collects information from the Australian Trade Commissioners, from British and foreign official sources, from Trade Representatives and other sources; and it distributes this information to the Council of Industrial Development of Western Australia, the Advisory Council of Science and Industry of South Australia, the Queensland State Trade Commissioner, Trade Associations, Chambers of Commerce and Manufactures in the various States, the Press, and sometimes confidentially to individuals.

3. Activities.—(i) *General.* The scope and usefulness of the Bureau's service may be gauged to a certain extent by the figures hereunder relating to routine work carried out during the last three years—

Commercial inquiries attended to by interview, mail, and telephone (over) ..	6,000
Trade inquiries circulated to Chambers of Manufactures and Commerce,	
all States	511
Foreign trade inquiries (other than U.S.A. and China)	984
China	1,033
United States of America	98
Through High Commissioner, London	415

It may be noted that there is an increasing disposition on the part of manufacturers, merchants, and exporters in all States to use the Bureau as a source of information, while general trade inquiries from other countries, and requests for information from overseas manufacturers with regard to the possibility and advisableness of establishing works in Australia have also considerably grown in volume.

(ii) *Nature of Inquiries dealt with.* Inquiries received and answered by the Bureau may, for convenience, be divided under two heads:—

(a) *From Overseas manufacturers*—(1) The availability, cost and quality of raw materials. (2) Import duties. (3) Tariff considerations. (4) Rates of wage and labour conditions generally. (5) Assistance in transferring plant and skilled operatives. (6) Local markets and possibility of export, etc.

(b) *General inquiries*—(1) By oversea merchants asking to be put in touch with suitable representatives in the Commonwealth. (2) By Australian exporters asking to be put in touch with reliable representatives in oversea countries. (3) By Australian producers regarding possible markets, local and external, for their products. (4) By oversea buyers regarding supplies of materials produced in Australia. (5) General and technical inquiries for varied information by local merchants, manufacturers, and producers.

(iii) *The Woollen Manufacturing Industry.* The Bureau has been particularly active in its endeavours to assist in the development of the woollen manufacturing industry in Australia, and the ease with which many of the recently-formed companies have been floated may, in some measure, be ascribed to the information collected and disseminated by the Bureau.

(iv) *Publications.* Further particulars concerning the activities of the Bureau may be found in the Reports which are issued annually.

§ 6. Commonwealth Institute of Science and Industry.

1. **General.**—An account of the origin of the temporary Institute was given in Official Year Book No. 9, pp. 1135–8, while the progress of its activities has been outlined in succeeding issues.

The “Institute of Science and Industry Act 1920,” assented to 14th September, 1920, provides for the establishment of the Institute on a permanent basis.

The Act also provides that the Institute shall establish (a) a Bureau of Agriculture, (b) a Bureau of Industries, and (c) such other Bureaux as the Governor-General determines. Power is given for the establishment of a General Advisory Council and Advisory Boards in each State to advise the Director with regard to—(a) the general business of the Institute or any Bureau thereof, and (b) any particular matter of investigation or research.

The term for which the appointment of Director is made is five years, and any person so appointed shall at the expiration of his term of office be eligible for reappointment. The first director of the permanent Institute is Sir G. H. Knibbs, K.B., C.M.G., President of the Australian Association for the Advancement of Science, Hon. F.S.S., M.I.I.S., Hon. M.S.S., Paris, Hon. M. Amer., S.A., etc., etc., formerly Commonwealth Statistician, who was appointed on the 18th March, 1921.

Under the Act the Director shall co-operate, so far as is possible, with existing State organizations in the co-ordination of scientific investigations. The statutory powers and functions of the Director are as follow:—(a) the initiation and carrying out of scientific researches in connexion with, or for the promotion of, primary or secondary industries in the Commonwealth; (b) the establishing and awarding of industrial research studentships and fellowships; (c) the making of grants in aid of pure scientific research; (d) the recognition or establishment of associations of persons engaged in any industry or industries for the purpose of carrying out industrial scientific research, and the co-operation with and the making of grants to such associations when recognized or established; (e) the testing and standardization of scientific apparatus and instruments, and of apparatus, machinery, materials and instruments used in industry; (f) the establishment of a Bureau of Information for the collection and dissemination of information relating to scientific and technical matters; and (g) the collection and dissemination of information regarding industrial welfare and questions relating to the improvement of industrial conditions.

2. **Work of the Institute.**—The Institute has made investigations into various matters of importance to the Commonwealth, and has issued a number of bulletins and

pamphlets. The subjects considered in previous years are briefly indicated on page 1037 of Year Book No. 15. The more important subjects studied in the past year are :—

- A. Agricultural and Pastoral Industries.* (i) Prickly Pear, (ii) White Ant Pest, (iii) Cereals, (iv) Viticultural Problems, (v) Sheep Blow-fly, (vi) Food Preservation, (vii) Cattle Tick, (viii) Castor Beans, (ix) Fruit By-products, (x) Dehydration of Fruit and Vegetables, (xi) Milk Products, (xii) Fertilizers, (xiii) Herbicides, (xiv) Animal Pests.
- B. Forest and Vegetable Products.* (i) Paper Pulp, (ii) Tanning Materials, (iii) Preservation of Timber, (iv) Wood Borers, (v) Essential Oils, (vi) Wood Waste.
- C. Manufacturing Industries.* (i) Leather and Tanning, (ii) Pottery, (iii) Engineering Standardization, (iv) Liquid Fuels, (v) Power Alcohol, (vi) Paints, (vii) Animal Products, (viii) Textiles, (ix) Building Materials, (x) Oil, Fat and Waxes.
- D. Mining and Metallurgy.* (i) Malleable Iron, (ii) Economic Minerals, e.g., Magnesite, Barytes, etc., (iii) Pigments, (iv) Metals and Alloys, (v) Ores, (vi) Oil Shale.
- E. Miscellaneous.* (i) Carburetters, (ii) Power, (iii) Clays.

In addition to these investigations, the nucleus of a Bureau of Information has been established, with a library of scientific books and journals catalogued and indexed. A large amount of information has been disseminated among Government Departments, technologists, manufacturers and others vitally interested in Australian Industry.

3. Publications.—A list of the publications issued up to the 14th March, 1921, is given in Year Book No. 14, p. 1063, since which date the following bulletins have also been issued :—(i) A Classification and detailed Description of the Barleys of Australia, (ii) A Classification and detailed Description of the Oats of Australia, (iii) The Production of Liquid Fuels from Oil Shale and Coal in Australia, (iv) The Manufacture of Pulp and Paper from Australian Woods. A pamphlet has also been published on "The Co-operative Development of Australia's Natural Resources," as well as circulars on the following subjects :—(i) Weevils in Wheat Stacks, (ii) Leaks in Fruit Containers, (iii) Scientific Road-making, (iv) a Forest Policy for Australia, (v) Cotton, its Cultivation in Australia, (vi) The Water Hyacinth, (vii) New Tanning Materials. The publication of "Science and Industry," the Journal of the Institute, has been suspended since the end of 1920.

§ 7. Department of Chemistry, South Australia.

In South Australia, a Department of Chemistry was formed in 1915. The Department is principally engaged in general routine chemical examinations and analyses in pursuance of various Acts of Parliament and for Government Departments, but the chemical investigation of local products and industries forms an important branch of its work. At first the Departments issued bulletins, of which nine have been published, but since 1918 the results of investigations made have been embodied in the reports of the Advisory Council of Science and Industry of South Australia. Researches have been carried out for the Wheat Weevil Committee, and investigations have been made into the lignites at Moorlands, the utilization of grapes and surplus lemons, cold-water paints and tannins. Further investigations into South Australian lignite are reported in the South Australian Mining Review.

§ 8. State Advisory Council of Science and Industry of South Australia.

The Advisory Council of Science and Industry of South Australia is the result of the fusion of the members of the Committee of Scientific Research and the Committee on Post-war Problems. The members of the Council, who all act in an honorary capacity, are the nominees of the different public bodies in the State, such as the Chamber of Commerce, the Chamber of Manufactures, Associated Banks, United Trades and Labour Council, Employers' Federation, etc., and include a number of technical Government officials and University professors.

For the purposes of investigation, the Council is divided into Committees, under the headings Agriculture, Pastoral, Mineral, Manufacture, Trade, Commerce, and Transport. These Committees consider and take evidence on subjects proper to their provinces, and report to the Government.

The office of the Council is attached to the Department of Chemistry, where research work is carried out at the instance of the Council, the Director of Chemistry being Vice-Chairman of the Council. Four reports have been issued for the years 1919 to 1922, and contain a summary of the work done, with reports of investigations, including the "Wheat Pests Problem," "Utilization of Surplus Lemons," "Cold Water Paint," "Tannins," etc. The Council also distributes information forwarded by the Commercial and Industrial Bureau of the Board of Trade.

§ 9. Valuation of Australian Production.

1. **Value of Production.**—The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact, complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connexion with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. The returns given in the following table for 1911 and subsequent years may be taken as substantially correct. The table hereunder shows the approximate value of the production from all industries during the years 1911 to 1921-22 :—

ESTIMATED VALUE OF PRODUCTION.—AUSTRALIA, 1911 TO 1921-22.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, and Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.(a)	Total.
	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
1911 ..	38,774	50,725	19,107	5,728	23,303	50,767	188,404
1912 ..	45,754	51,615	20,280	6,432	25,475	57,022	206,578
1913 ..	46,162	57,866	20,341	6,338	25,594	61,586	217,887
1914 ..	36,052	61,055	21,562	6,419	22,053	62,956	210,097
1915 ..	75,475	66,180	21,156	5,777	22,060	62,883	253,531
1916 ..	61,255	76,142	26,949	5,505	23,192	64,205	257,248
1917 ..	59,641	82,322	31,326	5,523	24,998	69,797	273,607
1918 ..	59,036	86,793	33,738	7,137	25,462	75,362	287,528
1919-20 ..	72,202	100,920	38,830	10,170	18,982	98,162	339,266
1920-21 ..	112,801	86,882	52,613	10,490	21,613	109,435	393,834
1921-22 ..	81,890	69,254	44,417	10,373	19,977	120,751	346,662

(a) These amounts differ from those given in Chapter XXII., Manufacturing Industry, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table.

2. **Relative Productive Activity.**—The relative output or production per head of population measured quantitatively cannot be gauged from a mere statement of the total value of production from year to year. If measured by mere value, increase of price would have the effect of making an equal production with that of a time when prices were lower, and show an increase which would, of course, be misleading. For example, the annual figures showing the estimated value of production from Australian industries do not directly show whether there has been any increase in the *quantity* produced, since the price-level at the time is itself a factor in the determination of the values. Before, therefore, any estimate of the relative increase or decrease in production (that is, in the

relative quantity of output) can be formed, the variations due to the price element must be eliminated. This is done in the following table, in which Column I. shows the estimated *value* of production (i) in the aggregate and (ii) per head of mean population. In Column II. the estimated value of production per head of population is shown in the form of index-numbers with the year 1911 as base; that is to say, the production per head in 1911 is made equal to 1,000, and the values for the other years computed accordingly. In Column III. wholesale and production price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in wholesale and production prices in Australia as a whole. The figures in Column IV. are obtained by dividing the figures for each year in Column II. by the corresponding figures in Column III. They show the estimated relative productive activity per head of population, taking the year 1911 as the basic or standard year, the fluctuations due to variations in prices having been eliminated.

RELATIVE PRODUCTIVE ACTIVITY.—AUSTRALIA, 1871 TO 1921-22.

Year.	I.		II.	III.		IV.	
	Estimated Value of Production.		Relative Value of Production per Head (Year 1911 = 1,000).	(a) Wholesale Price Index-Number (Year 1911 = 1,000).	(b) Production Price Index-Number (Year 1911 = 1,000).	Estimated Relative Productive Activity Index-Numbers (Year 1911 = 1,000).	
	(i) Total (000 omitted)	(ii) Per Head of Population.				(a)	(b)
	£	£					
1871	46,700	27.46	666	1,229	..	542	..
1881	71,116	30.83	748	1,121	..	667	..
1891	96,087	29.65	719	945	..	761	..
1892	95,244	28.81	699	918	..	761	..
1894	83,773	24.45	593	749	..	792	..
1896	92,605	26.06	632	922	..	685	..
1899	112,273	30.21	733	809	..	906	..
1901	114,585	29.96	727	974	..	746	..
1902	109,615	28.29	686	1,051	..	653	..
1903	117,672	30.04	729	1,049	..	695	..
1904	122,343	30.78	747	890	..	839	..
1905	135,846	33.68	817	910	..	898	..
1906	147,043	35.94	872	948	..	920	..
1907	166,042	39.90	968	1,021	..	948	..
1908	164,934	38.97	945	1,115	1,073	848	880
1909	174,195	40.29	977	993	1,000	984	977
1910	187,741	42.43	1,029	1,003	969	1,026	1,062
1911	188,404	41.19	1,000	1,000	1,000	1,000	1,000
1912	206,578	43.52	1,057	1,170	1,110	903	952
1913	217,887	44.52	1,081	1,088	1,051	994	1,029
1914	210,097	42.25	1,026	1,149	1,263	893	812
1915	253,531	51.01	1,238	1,604	1,431	772	865
1916	257,248	52.30	1,270	1,504	1,499	844	847
1917	273,607	54.91	1,333	1,662	1,607	802	829
1918	287,528	56.58	1,374	1,934	1,770	710	776
1919-20	339,266	63.96	1,553	2,312	2,117	672	734
1920-21	393,834	72.77	1,767	2,266	2,097	780	843
1921-22	346,662	62.91	1,527	1,741	1,564	877	976

(a) Relative Production computed by application of Wholesale Price Index-numbers. (b) Index-numbers computed by application of Production Price Index-numbers.

The total production from all industries during 1921-22 was £346,662,000, equal to an average of £62.91 per inhabitant.

In Year Book No. 5 (page 1217) will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by the Customs Department of the collection of statistics of interstate trade.

CHAPTER XXVII.

STATISTICAL ORGANIZATION AND SOURCES OF INFORMATION.

§ 1. General.

1. **Development of Australian Statistics.**—(i) *Crown Colony Blue Books.* The statistical organization of the Australian States owes its origin to the “Blue Books” which in the Crown Colony days were prepared annually for the information of the Colonial Office, London. These documents were intended rather for administrative purposes than as records of statistical data, but their use in this latter respect has in many cases been quite as important as their primary purpose.

The account of the growth and progress of an infant colony furnished by a series of these Blue Books is highly informative, and although some matters of great importance were left untouched, or treated insufficiently, the limited range of economic activities was usually fairly covered, and an interesting index of material development was furnished.

Apart from their specific utility, these Blue Books served the purpose of a basis on which the later statistical publications were fashioned, and they thus furnished for the British Empire an element of uniformity in the matter of statistical compilation.

(ii) *Statistical Registers.* Following the advent of Responsible Government which was granted during the period 1851–60 to all the Australian States except Western Australia—and to that State in 1890—the “Blue Book” was succeeded by a publication which in all cases was known as the “Statistical Register.” In many respects this was the old Blue Book in a new guise. The information contained was in most cases a summary of the more important data obtainable as by-products from the activities of the various administrative departments of the Government. Gradually, however, statistical consciousness emerged, and the necessity for special effort in the compilation of such data was realized. The most important of the early evidences of definite statistical effort was the taking of the population Censuses which in all the States were initiated under the Crown Colony régime. This for long furnished the sole example of extensive governmental organization for a purely statistical purpose; in practically all other cases the statistics were by-products. The growing need for quantitative data concerning the progress of the several young communities of Australia led to improvement in the methods of statistical record, and gradually to the recognition of an officer of the public service whose principal duty was that of preparing and publishing such data. It was probably due to the circumstance that the office of the Registrar-General of Births, Deaths, and Marriages had usually been employed as head-quarters for the intermittent Censuses that this officer in many of the States was selected as the Statistician, and in some instances received that or a similar title in addition to his title of Registrar-General.

(iii) *Prominent State Statisticians.* Amongst the various holders of the position of Government Statistician, or its equivalent, three stand out prominently in respect of their efforts to place Australian Statistics on a satisfactory basis. The earliest of these was Mr. H. H. Hayter, who filled the position of Government Statist of Victoria from 1873 until his death in 1895. Under his control the “Victorian Year Book” and the Statistical Bureau were initiated, many marked improvements were effected in the collection and tabulation of statistical data, and a reputation for careful investigation and lucid interpretation was established. Under his guidance excellent statistical data for Australasia were compiled annually, and he was an untiring worker in the cause of statistical uniformity. His nosological index for the classification of causes of death was long a standard work in the field of Vital Statistics in Australia. The next in point of time of the three mentioned above was Mr. R. M. Johnston, who filled the position of Government Statistician in Tasmania from 1882 until his death in 1918. Like Mr. Hayter, he was a keen advocate of uniformity throughout Australia in the compilation of statistics, and gave great assistance at various statistical conferences, particularly in the matter

of classification of data. He was a man of diversified attainments, and his influence on the development of statistical investigation in Australia was considerable. The third of the State statisticians indicated as deserving notice was Mr. T. A. Coghlan (now the Hon. Sir T. A. Coghlan, K.C.M.G., I.S.O.), who filled the position of Government Statistician in New South Wales from 1886 to 1905, when he resigned to take up other duties. Under his direction many improvements were effected in the statistical compilations of that State, and the Statistical Register issued during and since his time is one of the most complete statistical analyses of any community available. A year book entitled "The Wealth and Progress of New South Wales" was published by him, and also a publication entitled "The Seven Colonies of Australia," which appeared at intervals of about two years. This latter is of some special interest as its general plan formed the groundwork of the present "Official Year-Book of the Commonwealth of Australia." Apart from his individual efforts in the direction of statistical uniformity for Australia, Mr. Coghlan was also strongly in favour of the practice of holding periodical statistical conferences, and assisted at several of these in connexion with census and general statistics.

(iv) *Statistical Conferences.* To enable the statisticians of the several States to interchange ideas, and to ensure the attainment of results which would be capable of comparison and would be suitable for the ascertainment of aggregates for Australia, conferences were held from time to time in the several States from as early a date as 1861. There were in all six conferences prior to the formation of the Federal Bureau of Census and Statistics in 1906. These conferences took place respectively in 1861, 1875, 1890, 1900, 1902, and 1903, and in many cases were attended by a representative of New Zealand. By means of them a great improvement in the uniformity of statistical data was effected.

(v) *Federal Bureau.* Under the provisions of the Commonwealth Constitution, section 51, sub-section (xi.), power is conferred on the Federal Parliament "to make laws for the peace, order, and good government of the Commonwealth with respect to Census and Statistics." In compliance with this provision, the Census and Statistics Act 1905 was passed, and in 1906 the Federal Bureau of Census and Statistics was created. The first Federal Statistician was Mr. G. H. Knibbs (now Sir George H. Knibbs, K.B., etc.) who filled the position from 1906 until his appointment in 1921 to the position of Director of the Commonwealth Institute of Science and Industry. To the task of organizing the work of the new Bureau Mr. Knibbs brought a lengthy and varied experience in important branches of public service in New South Wales, and in the formation of his staff he drew largely upon the staffs of existing State Statistical Offices. One of the earliest steps taken was that of holding in November and December, 1906, a conference with the State statisticians to define the relations between the several Bureaux and to arrange for the interchange of data. The conference was marked by great cordiality between the various representatives, and an extensive series of forms was approved for the supply of data by the States to the Commonwealth. In each case, the State Statistician became the representative in his own State of the Commonwealth Statistician for the purpose of carrying out the provisions of the Federal Act. Some of the outstanding features of the Bureau's activities during the period of control by Mr. Knibbs were as follows:—

(a) The initiation and annual publication of the Official Year-Book of the Commonwealth of Australia;

(b) The annual publication of Statistical Bulletins dealing with the principal activities of the whole of Australia;

(c) The quarterly (at one time monthly) publication of a Summary of Australian Statistical Data;

(d) The formation of a Labour and Industrial Branch to record prices, wages, and kindred matters;

(e) The taking of population censuses for all Australia in 1911 and 1921;

(f) The taking of a special War Census (including a Wealth Census) in 1915;

(g) The compilation and publication of a series of Life Tables for Australia and its component States, and of monetary tables based thereon.

The vacancy caused by the transfer of Mr. Knibbs was filled in 1922 by the appointment—as from 1st August in that year—of Mr. C. H. Wickens, who had previously filled the position of Supervisor of Census in the Bureau.

(vi) *Uniformity of Statistical Control.* At various dates since the creation of the Commonwealth, proposals have been made for the unification of statistical compilation in Australia. Under the provisions of the Federal Constitution the item "Census and Statistics" is not allocated exclusively to the Federal Parliament, but is one of those matters in connexion with which powers may be exercised concurrently by Federal and State Legislatures. In the matter of the Census, the States have ceased to function since the Commonwealth undertook the work, but the right of a State to take a Census at any time is not vitiated thereby. In the field of General Statistics, on the other hand, there are now seven separate bureaux operating. As, however, each State bureau is concerned solely with its own territory, and as in many matters the Commonwealth Bureau is largely interested in the presentation of the data for Australia as a whole, there is not a great deal of overlapping or duplication of effort. Such duplication does, however, exist to some extent, especially in the matter of publication, and at conferences of the State Premiers in 1906 and 1918 resolutions were passed in favour of combining Federal and State bureaux, but in each case the idea was subsequently abandoned. At a conference between Federal and State Ministers in May, 1923, the matter was again under consideration, and a resolution in favour of one statistical authority for Australia was passed, the consideration of details to be left to a conference of Commonwealth and State Statisticians. At the time of writing, June, 1923, this is the position in which the matter stands.

(vii) *Present Organization.* The existing organization in respect of the collection, tabulation, etc., of statistical data as between the State and Federal Statistical Bureaux, and State and Federal Government Departments, is set forth in the accompanying conspectus.

PRESENT ORGANIZATION OF STATISTICAL COLLECTION, TABULATION, SUMMARY AND REVIEW.

A.—CLASSIFICATION ACCORDING TO SUBJECT.

Note.—C.S.=Commonwealth Statistician. S.S.=State Statistician.
C.D.=Commonwealth Department S.D.=State Department
(non-statistical). (non-statistical).

Subject.	Collected by—	Tabulated by—	Australian results summarized and reviewed by—
I. Population—			
(i) Census	C.S.	C.S.	C.S.
(ii) Vital Statistics	S.D.	C.S. and S.S.	C.S.
(iii) Migration	C.S., C.D. and S.D.	C.S.	C.S.
II. Production—			
(i) Land Settlement	S.D.	S.D.	C.S.
(ii) Agriculture	S.S.(a)	S.S.	C.S.
(iii) Pastoral	S.S.(a)	S.S.	C.S.
(iv) Dairying	S.S.(a)	S.S.	C.S.
(v) Mineral	S.D.	S.D.	C.S.
(vi) Forestry	S.D.	S.D.	C.S.
(vii) Fisheries	S.D.	S.D.	C.S.
(viii) Water Conservation	S.D.	S.D.	C.S.
(ix) Manufacturing	S.S.(a)	S.S.	C.S.
III. Transport and Communication—			
(i) Railways—			
(a) Government (C'wealth)	C.D.	C.D.	C.S.
(b) Government (State)	S.D.	S.D.	C.S.
(c) Private	C.S.	C.S.	C.S.
(ii) Tramways	C.S.	C.S.	C.S.
(iii) Shipping	C.D.	C.S.	C.S.
(iv) Posts	C.D.	C.D.	C.S.
(v) Telegraphs	C.D.	C.D.	C.S.
(vi) Telephones	C.D.	C.D.	C.S.

(a) State Police collect original individual returns from owners, occupiers, etc., without charge (except out-of-pocket expenses).

PRESENT ORGANIZATION OF STATISTICAL COLLECTION, TABULATION,
SUMMARY AND REVIEW—*continued.*

A.—CLASSIFICATION ACCORDING TO SUBJECT—*continued.*

Subject.	Collected by—	Tabulated by—	Australian results summarized and reviewed by—
IV. Trade and Commerce—			
(i) Imports	C.D.	C.D.	C.S.
(ii) Exports	C.D.	C.D.	C.S.
(iii) Customs	C.D.	C.D.	C.S.
(iv) Excise	C.D.	C.D.	C.S.
V. Finance—			
(i) Commonwealth	C.D.	C.D.	C.S.
(ii) State	S.D.	S.D.	C.S.
(iii) Private			
(a) Banking	C.S. and S.S.	C.S. and S.S.	C.S.
(b) Insurance	C.S. and S.S.	C.S. and S.S.	C.S.
VI. Social—			
(i) Education	S.D.	S.D.	C.S.
(ii) Hospitals	S.S.	S.S.	C.S.
(iii) Charities	S.S.	S.S.	C.S.
(iv) Judicial	S.S.	S.S.	C.S.
VII. Labour and Industrial— ..			
(i) Prices	C.S. and S.S.	C.S. and S.S.	C.S.
(ii) Wages	C.S. and S.D.	C.S. and S.D.	C.S.
(iii) Industrial Disputes	C.S. and S.D.	C.S. and S.D.	C.S.
(iv) Trade Unionism	C.S. and S.D.	C.S. and S.D.	C.S.
(v) Unemployment	C.S. and S.D.	C.S. and S.D.	C.S.
VIII. Local Government	S.S.	S.S.	C.S.
IX. Miscellaneous—			
(i) Electoral	C.D. and S.D.	C.D. and S.D.	C.S.
(ii) Meteorological	C.D.	C.D.	C.D.

B.—CLASSIFICATION OF SUBJECTS ACCORDING TO DEPARTMENT RESPONSIBLE FOR
COLLECTION.

Data collected by—

Commonwealth Statistician.	Commonwealth Department (non-statistical).	State Statist.	State Department (non-statistical).
Census.	Migration (Sea).	Agriculture.	Vital Statistics.
Migration (Rail).	Government Railways (C'wealth).	Pastoral.	Land Settlement.
Railways (Private).	Shipping.	Dairying.	Mineral.
Tramways.	Posts.	Manufacturing.	Government Railways (State).
Banking.	Telegraphs.	Banking.	Forestry.
Insurance.	Telephones.	Insurance.	Fisheries.
Prices.	Imports.	Hospitals.	Water Conservation.
Wages.	Exports.	Charities.	Finance (State).
Industrial Disputes.	Customs.	Judicial.	Education.
Trade Unionism.	Excise.	Prices.	Wages.
Unemployment.	Finance (C'wealth).	Local Government.	Industrial Disputes.
	Electoral (C'wealth).		Trade Unionism.
	Meteorological.		Unemployment.
			Electoral (State).

PRESENT ORGANIZATION OF STATISTICAL COLLECTION, TABULATION, SUMMARY, AND REVIEW.—*continued.*

C.—CLASSIFICATION OF SUBJECTS ACCORDING TO DEPARTMENT RESPONSIBLE FOR INITIAL TABULATION.

Commonwealth Statistician.	Commonwealth Department.	State Statist.	State Department.
Census.	Government Railways (C'wealth).	Vital Statistics.	Land Settlement.
Vital Statistics.	Posts.	Agriculture.	Mineral.
Migration (Rail and Sea).	Telegraphs.	Pastoral.	Government Railways (State).
Railways (Private).	Telephones.	Dairying.	Forestry.
Tramways.	Imports.	Manufacturing.	Fisheries.
Shipping.	Exports.	Banking.	Water Conservation.
Banking.	Customs.	Insurance.	Finance (State).
Insurance.	Excise.	Hospitals.	Education.
Prices.	Finance (C'wealth.)	Charities.	Wages.
Wages.	Electoral (C'wealth.)	Judicial.	Industrial Disputes.
Industrial Disputes.	Meteorological.	Prices.	Trade Unionism.
Trade Unionism.		Local Government.	Unemployment.
Unemployment.			Electoral (State).

D.—THE AUSTRALIAN RESULTS ARE SUMMARIZED AND THE STATISTICS ARE REVIEWED BY THE COMMONWEALTH STATISTICIAN IN ALL THE CASES ABOVE EXCEPT METEOROLOGICAL STATISTICS WHICH ARE DEALT WITH ENTIRELY BY THE COMMONWEALTH METEOROLOGIST.

2. **Sources of Information.**—The foregoing conspectus gives in concise form the main sources from which general statistical data are obtained. It may be noted that such information is furnished in various ways—(a) Directly, in response to the Commonwealth Statistician's demand; (b) by the State Statisticians who collect directly from individuals or through the medium of police officers or special collectors; (c) by Commonwealth and State Government Departments either in their Departmental Reports or in response to special inquiries (the Commonwealth Trade and Customs Department supplies returns of Trade, and of Customs and Excise); (d) by scientific and technical experts invited to contribute special articles for the Official Year Book.

In addition, information may be obtained through the State Statisticians acting in the capacity of duly constituted officers under the provisions of the Commonwealth Census and Statistics Act.

§ 2. Statistical Publications of Australia.

1. **General.**—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz. :—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are many other reports, etc., issued regularly, which though not wholly statistical, necessarily contain a considerable amount of statistical information. The more important of these published to June, 1923, are indicated below.

2. **Commonwealth Publications.**—Commonwealth publications may be grouped under two heads, viz. :—(i) Publications issued by the Commonwealth Statistician, and (ii) Parliamentary and Departmental Reports and Papers.

(i) *Publications issued by the Commonwealth Statistician.* The following is a list of the principal statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration up to June, 1923 :—

Australian Life Tables, 1901–1910. Australian Joint Life Tables, 1901–1910.

Census (1911) Bulletins.

Census (1911) Results.—Vols. I., II., and III., with Appendix “Mathematical Theory of Population.”

Census (1921) Results.—Bulletins, Nos. 1 to 18.

Finance—Bulletins, 1907 to 1915–16 annually; 1916–17; 1917–18 and 1918–19, (one vol.); 1919–20 and 1920–21 (one vol.); 1921–22.

Labour and Industrial Statistics—Memoranda and Reports, various, to 1913. *Annual Reports*—Prices, Purchasing Power of Money, Wages, Trade Unions, Unemployment, and General Industrial Conditions, 1913 to 1922.

Local Government in Australia—July, 1919.

Official Year Book of the Commonwealth of Australia—Annually, 1907 to present issue (1923).

Pocket Compendium of Australian Statistics (formerly *Statistical Digest*), 1913, 1914, 1916, 1918, 1919, 1920, 1921, and 1922.

Population and Vital Statistics Bulletins—Reports, various. Commonwealth Demography, 1911 to 1921.

Production—Bulletins, annually, 1906 to 1920–21.

Professional Papers—Various. A full list will be found in *Official Year Book* No. 13, p. 3.

Quarterly Summary of Australian Statistics—first issue, No. 70, December, 1917, replacing *Monthly Summary of Australian Statistics* (Bulletins 1 to 69), and incorporating data from earlier publications relating to Labour, Shipping, Trade, Vital Statistics, Oversea Migration, etc.

Social Insurance—Report to the Hon. the Minister of Trade and Customs, 1910.

Social Statistics—Bulletins, 1907 to 1920 annually.

Superannuation for the Commonwealth Public Service—Report to the Hon. the Minister for Home Affairs, 1910.

Trade and Customs—Trade, and Customs and Excise Revenue, annually, 1906 to 1921–22.

Transport and Communication—Bulletins, 1906 to 1916 annually; 1917 and 1918 (one vol.); 1920; 1921.

Wealth—The Private Wealth of Australia and its Growth, as ascertained by various methods, together with a Report of the War Census in 1915.

(ii) *Commonwealth Parliamentary and Departmental Reports and Papers*. Lists of the principal official reports and other documents containing statistical information issued from the inauguration of the Commonwealth were given in preceding Year Books, but limits of space preclude the incorporation of this information in the present volume.

3. **State Publications.**—The chief statistical publications of each State are set out hereunder. Limits of space preclude a further enumeration of the various Departmental Reports, statements of accounts, etc., issued by officials, boards, local government bodies, etc., in each State.

- (a) New South Wales—Statistical Register (annual); Official Year Book of New South Wales (annual); Statesman's Year Book (annual); Vital Statistics (monthly and annual); Statistical Bulletin (monthly to December, 1919, thereafter quarterly).
- (b) Victoria—Statistical Register (annual to 1916, then discontinued); Victorian Year Book (annual); Vital Statistics (annual and quarterly); Statistical Abstracts (quarterly to 1917).
- (c) Queensland—Statistical Register (annual); Official Year Book, 1901; A.B.C. of Queensland Statistics (annual); Vital Statistics (annual and monthly).
- (d) South Australia—Statistical Register (annual); Official Year Book, 1912 and 1913; Blue Book (annual); Statesman's Pocket Year Book (annual); Returns of Births and Deaths (monthly).
- (e) Western Australia—Statistical Register (annual); Statistical Abstracts (quarterly, previously issued monthly to July, 1917); Pocket Year Book of Western Australia (annual); Circular (monthly), containing Principal Statistics.
- (f) Tasmania—Statistical Register (annual); Statesman's Pocket Year Book annual, from 1915; Statistical Summaries (annual); Vital Statistics and Migration (annual and monthly).

§ 3. Bibliography of Recent Works on Australia.

1. **General.**—In Official Year Book No. 13, a list of the principal general works dealing with Australia and Australian affairs, published from 1901 to 1920, will be found. Of the publications of the first sixteen years of the Commonwealth the more important are now repeated, with a fuller list of works published within the last six years.

- ALLIN, C. D. *A History of the Tariff Relations of the Australian Colonies.* Minneapolis, 1918.
- ATKINSON, MEREDITH (Ed.). *Australia: Economic and Political Studies*, by Various Writers. Melbourne, 1920.
- AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. *Annual Reports of Proceedings.*
- BEAN, C. E. W. (Ed.). *Official History of Australia in the War of 1914–1918* (in 12 vols.). Vol. I., Sydney, 1921.
- BLAND, F. A. *Shadows and Realities of Government*, W.E.A. Series, Sydney, 1923.
- BOWDEN, S. H. *History of the Australian Comforts Fund.* Sydney, 1922.
- BRADY, E. J. *Australia Unlimited.* Melbourne, 1918.
- BRITISH IMMIGRATION LEAGUE OF AUSTRALIA. *Annual Reports.*
- BRYANT, J. *The Story of Australia: for Boys and Girls.* London, 1920.
- BRYCE, VISCOUNT. *Modern Democracies.* London, 1921.
- COGHLAN, SIR T. A. *Labour and Industry in Australia.* London, 1918. 4 vols.
- COLLINGRIDGE, GEORGE. *First Discovery of Australia and New Guinea.* Sydney, 1906.
- DUNBABIN, T. *The Making of Australasia; a brief History of the Origin and Development of the British Dominions in the South Pacific.* London, 1922.
- ELLIS, A. D. *Australia and the League of Nations.* Melbourne, 1922.
- EVATT, H. V. *Liberalism in Australia.* Sydney and London, 1918.
- FAVENC, E. *Explorers of Australia.* Melbourne, 1908.
- FEDERAL HANDBOOK OF AUSTRALIA. Melbourne, 1914.
- FOSTER, MRS. A. G. *Odd Bits of Old Sydney.* Sydney, 1921.
- FOSTER, A. G. *Early Sydney.* Sydney, 1920.
- FOX, FRANK. *Peeps at Many Lands. Australia.* London, 1911.
- GREGORY, J. W. *The Dead Heart of Australia.* London, 1906. *Australia and New Zealand* (in Stanford's Compendium of Geography and Travel). London, 1907. *Australia.* Cambridge, 1916.
- GULLETT, H. S. *Official History of Australia in the War of 1914–18.* Vol. VII. Sydney, 1923.
- GULLETT, H. S. *The Opportunity in Australia.* London, 1914.
- HEATON, H. *Modern Economic History* (with Special Reference to Australia), W.E.A. Series. Melbourne, 1921.
- HIGGINS, H. B. *A New Province for Law and Order*, W.E.A. Series. Sydney, 1922.
- HOOKEY, M. *The Romance of Tasmania.* Hobart, 1921.
- HOWITT, DR. A. W. *The Native Tribes of South East Australia.* London, 1904.
- HUGHES, W. *Geography of Australia and Polynesia.* London, n.d.
- JACK, R. L. *Northmost Australia.* Melbourne, 1922.
- JENKS, E. *History of the Australasian Colonies.* 3rd Edition. Cambridge, 1912.
- JENNESS, D., and BALLANTYNE, A. *The Northern D'Entrecasteaux.* Oxford, 1920.
- JOHNS, FRED. *Notable Australians.* Adelaide, 1906 and 1908. *Australasia's Prominent People.* London, 1914. *Fred Johns' Annual, showing Who's Who in Australia.* Adelaide, 1912, 1913, 1914; Sydney, 1922.
- JOSE, A. W. *History of Australasia.* 7th edition. Sydney, 1921.
- KNOWLES, G. S. *The Acts of the Parliament of the Commonwealth of Australia from 1901 to 1911, and in force on January 1, 1912.* Melbourne, 1914.
- LONG, C. R. *Stories of Australian Exploration.* Melbourne. Editions 1903, 1906, and 1913.
- LONG, C. R., and WALLACE, G. M. *Notable Deeds of Famous Men and Women.* Melbourne, 1921. *Stories of British Worthies on Sea and Land.* Melbourne, 1921.
- MASSON, E. R. *An Untamed Territory—The Northern Territory of Australia.* London, 1915.
- MILLS, DR. R. C. *The Colonization of Australia (1829–42).* London, 1915.
- MONASH, LIEUT.-GEN. SIR JOHN. *The Australian Victories in France in 1918.* London, 1920.
- MONCKTON, C. A. W. *Some Experiences of a New Guinea Resident Magistrate.* London, 1921.
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APPENDIX.

[Recent information and returns which have come to hand since the various chapters were sent to press are given hereunder.]

CHAPTER III. GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

4. The Cabinet and Executive Government. (v) *The Cabinet.* (c) *State Ministries* (pp. 91, 92). Certain changes have been made in the Ministries in Victoria and Tasmania. The names of the new Ministers, as at the 1st October, 1923, are shown below.

VICTORIA.

<i>Premier and Minister of Water Supply—</i> HON. H. S. W. LAWSON.	<i>Minister of Agriculture and Railways—</i> HON. F. E. OLD.
<i>Treasurer—</i> HON. SIR W. M. MCPHERSON, K.B.E.	<i>Commissioner of Public Works and Minister of Mines—</i> HON. G. L. GOUDIE, M.L.C.
<i>Attorney-General and Solicitor-General—</i> HON. SIR A. ROBINSON, K.C.M.G., M.L.C.	<i>Commissioner of Crown Lands and Minister of Immigration—</i> HON. J. ALLAN.
<i>Minister of Education, Forests, and Labour—</i> HON. SIR A. J. PEACOCK, K.C.M.G.	<i>Ministers without Portfolio—</i> HON. H. I. COHEN, K.C., M.L.C. HON. J. GORDON. HON. M. E. WETTENHALL.
<i>Chief Secretary and Minister of Public Health—</i> HON. S. ARGYLE, M.R.C.S.	

TASMANIA.

<i>Premier, Treasurer, and Minister for Railways—</i> HON. SIR W. H. LEE, K.C.M.G.	<i>Minister for Works, Lands, and Agriculture—</i> HON. E. HOBBS.
<i>Attorney-General and Minister for Education—</i> HON. A. HEAN, C.M.G.	<i>Chief Secretary and Minister for Mines and Forestry—</i> HON. J. C. NEWTON. <i>Minister without Portfolio—</i> HON. G. H. PITT, M.L.C.

§ 2. Parliaments and Elections.

7. *The Parliament of Queensland*, p. 98.—At the general elections held on the 12th May, 1923, the number of electors enrolled was:—Males, 257,001; females, 219,476; total, 476,477. The number of electors who voted in contested electorates was:—Males, 194,287; females, 174,980; total, 369,267. The percentages of electors who voted in contested electorates were:—Males, 80.72 per cent.; females, 83.96 per cent.; persons, 82.23 per cent. There were four uncontested electorates, in which 27,390 electors were enrolled.

§ 5. Legislation during 1922.

9. **Western Australia, p. 111.**—(i) *Public Education Acts Amendment Act*. Provision is made for the formation of “Parents and Citizens Associations” with the object of promoting the interests and efficiency of Government schools. Each Association may nominate members of a School Board, which may advise the Department in matters connected with the school, etc.

(ii) *Married Women’s Protection Act*. The Summary Jurisdiction (Married Women) Acts of 1896 and 1902 are repealed, and fresh provisions made with regard to a married woman whose husband has been guilty of cruelty, adultery, desertion, etc.

(iii) *Pearling Act Amendment Act*. The Act of 1912 is amended in several particulars and a fresh schedule of licence fees prescribed.

(iv) *Dairy Cattle Improvement Act 1922*. All bulls within certain proclaimed areas must be registered.

(v) *Dairy Industry Act*. Dairy produce factories and others must be registered, inspectors may be appointed, and regulations are made in regard to the manufacture of dairy produce.

(vi) *Licensing Act Amendment Act*. Fresh provisions are made for the constitution of Licensing Courts, for the increase in the number of licences on petition, for the amount of accommodation to be provided in newly licensed premises, and for the fees payable for licences. Existing provisions relating to local option are repealed, and a Licences Reduction Board constituted with the duty of reducing the number of licences in the State to the extent that the amount of money in the Compensation Fund will allow, such fund being formed chiefly from 2 per cent. of the amount paid for liquor purchased. In 1925, and in every fifth year thereafter, a poll is to be taken of the electors for the Legislative Assembly on the subject of prohibition.

(vii) *Land and Income Tax Assessment Amendment Act*. The income of any male person over 65 years, or female person over 60 years, from personal exertion not exceeding £250 a year, is exempted from income tax. The following deductions are allowed:—
(a) Travelling expenses up to £15, from the living to the business place of the taxpayer;
(b) calls in mining companies prospecting in Western Australia; and (c) up to £40 for money actually expended on each dependent. The exemption for a married person is raised to £200.

(viii) *Workers’ Compensation Act Amendment Act*. The definition of a worker is enlarged to include timber workers and persons engaged in manual labour under the Controller of Group Settlements.

(ix) *Electoral Districts Act*. The Governor may appoint three Electoral Commissioners, with power to divide the State into fifty districts.

(x) *Miner’s Phthisis Act*. Provision is made for the medical examination of miners, for the prohibition of the employment of miners suffering from tuberculosis, and for the compensation of such miners.

(xi) *Agricultural Seeds Act*. The sale of agricultural seeds is regulated, and power given to officers appointed for the purpose to enter places where seeds are kept, and inspect the seeds found therein.

(xii) *Land and Income Tax Act Amendment Act*. The rate of income tax is increased by 15 per cent.

CHAPTER VI.

OVERSEA TRADE.

§ 4. Oversea Trade.

1. Total Oversea Trade, p. 222.—The following particulars have been compiled from preliminary returns relating to the Oversea Trade of Australia during the year 1922-23 :—

Period.	Recorded Value.			Value per Inhabitant.			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1922-23 ..	131,809	117,913	249,722	23 7 10	20 18 7	44 6 5	89.5

CHAPTER VII.

TRANSPORT AND COMMUNICATION.

F. POSTS, TELEGRAPHS AND TELEPHONES.

§ 1. Posts.

4. Rates of Postage, p. 344.—The following rates of postage came into force on the 1st October, 1923 :—

POSTAL RATES, 1923.

Postal Article.	Rates of Postage.		
	For Inland Delivery.	For Despatch Overseas.	
		British Empire.	Foreign Countries.
Letters	1½d. per ounce	1½d. per ounce	First ounce 3d., additional ounce 1½d.
Lettercards	1½d. each ..	1½d. each	3d. each
Postcards	1d. each ..	1d. each	1½d. each
Commercial Papers ..	1d. per 2 ounces	New Zealand and Fiji, 1d. per 2 ounces; other parts, 1d. per 2 ounces (minimum 3d.)	1d. per 2 ounces (minimum 3d.)
Printed Papers ..	1d. per 4 ounces	1d. per 4 ounces	1d. per 2 ounces
Patterns and Samples	1d. per 2 ounces	1d. per 2 ounces	1d. per 2 ounces (minimum 2d.)
Merchandise ..	1d. per 2 ounces	New Zealand and Fiji, 1d. per 2 ounces; other parts at parcel rates	Parcel rates
Newspapers printed and published in Australia	For each newspaper(a), 1d. per 10 ounces	New Zealand and Fiji(a), 1d. per 10 ounces United Kingdom— (i) Via France(a), 1d. per 4 ounces, 1½d. for 4 to 10 ounces, 1d. for each additional 4 ounces (ii) Wholly by sea, each newspaper exceeding 8 ounces, 1½d. every 16 ounces (iii) Via America, 1d. per 4 ounces (iv) Other parts, 1d. per 4 ounces	United States of America, each newspaper, 1d. per 4 ounces; other countries, 1d. per 2 ounces
Newspapers printed and published outside Australia	1d. per 4 ounces	1d. per 4 ounces	1d. per 2 ounces
Magazines and Books printed in Australia	1d. per 8 ounces	1d. per 4 ounces	1d. per 2 ounces
Magazines and Books printed outside Australia	1d. per 4 ounces		
Catalogues wholly set up and printed in Australia	1d. per 4 ounces	.. ..	..

(a) Provided that the postage on a package containing more than one newspaper shall not be higher than that chargeable on a package of printed papers of the same weight.

CHAPTER VIII.

FINANCE.

§ 2. Consolidated Revenue Fund.

Division IV.—Subsidy Paid to States.

1. **Payments to the Several States**, p. 385. (See also §1. 3, p. 400). A conference of Commonwealth and State Ministers was held in Melbourne on 23rd May, 1923, to discuss matters of common interest. The main problem for settlement was that arising from the raising and allocation of the revenues of the Commonwealth and States. The Conference aimed at the termination of the present arrangement under which the Commonwealth pays to the States on a *per capita* basis part of the revenue which it collects; concurrently it was hoped to simplify the entire taxation systems of Australia.

The Commonwealth Prime Minister submitted a scheme intended to secure the attainment of both of these objects. He proposed to cease to collect income tax from all individuals whose incomes were £2,000 a year or less, and to grant an exemption of £2,000 to individuals with incomes over that amount. At the same time he proposed to discontinue the *per capita* payments to the States, leaving the latter free to balance their Budgets by increasing their income tax revenues in the field vacated by the Commonwealth. On the basis of figures supplied by the Commonwealth Treasury, it was believed that Queensland and Tasmania would stand to lose by this arrangement. Accordingly it was proposed to stabilize the finances of these States by a grant of £55,000 to the former and £80,000 to the latter. Inclusive of the above shortage, and certain special payments to the States of Queensland, Western Australia, and Tasmania, the Commonwealth would make an annual payment of £646,000 per annum to these three States. Finally, the Commonwealth Government proposed to enter on these arrangements for a period of five years, and thereafter until otherwise provided.

These proposals were not acceptable to the State Ministers, who put forward counter-proposals for the complete retirement of the Commonwealth from the field of income taxation. The States were willing on that condition to relinquish the capitation payments and to contribute to the Commonwealth Treasury sums to cover any Commonwealth loss entailed under the proposals.

As Commonwealth Ministers could not accept the offer of the States, the Prime Minister proposed that the Commonwealth should vacate the field of income taxation so far as it related to individuals, but should retain the right to tax companies up to a maximum limit of 2s. 6d. in the £1. As a set-off against this the Commonwealth would cease the payment to the States of the capitation allowances and the interest on the transferred properties. Before completing the new scheme it would be necessary to ascertain the exact value of the field to be vacated by the Commonwealth, because certain cash payments to be made by the Commonwealth to the States to save embarrassment of State finances could not be calculated until that value was ascertained.

These suggestions were much more favourably received, and ultimately five of the States—New South Wales dissenting—agreed to accept the principle of the new Commonwealth proposals.

The statistics relating to income tax have since been carefully investigated, and it has been found that figures on which to base payments to the States would not be available for some time. The operation of the scheme was therefore deferred for one year, and meanwhile efforts were made to arrange for one collecting authority for both State and Federal income taxes. Agreements have been drawn up between the Commonwealth on the one hand and the States of New South Wales, Victoria, and South Australia on the other, under which the State taxation officers will collect both taxes, except where the Commonwealth incomes are derived from two or more States. Similar negotiations with Queensland and Tasmania have not yet reached finality, whilst in Western Australia there has been for some years only one collecting authority—the Commonwealth.

CHAPTER XVII.

AGRICULTURAL PRODUCTION.

§ 4. Wheat.

7. **Voluntary Wheat Pools, p. 723.**—The voluntary pooling scheme created to handle the 1921–22 wheat harvests in New South Wales, Victoria, and South Australia was continued in connexion with the 1922–23 yields, and a similar practice was also adopted in Western Australia during 1922–23 in lieu of the compulsory Government pool of the previous season. The system is a co-operative one, controlled by Committees appointed by the growers, the whole of the proceeds, less administrative expenses, being distributed amongst contributors of wheat to the pool. The marketing of wheat in Queensland was conducted on the compulsory basis by the State Wheat Board, the members of which were nominated by the Minister for Agriculture. The quantities of wheat received by the different pools were as follows :—

WHEAT RECEIVED BY VOLUNTARY POOLS, 1922–23.

Particulars.	Unit.	N.S.W.	Victoria.	S. Aust.	W. Aust.
Wheat received ..	Bushel	11,650,523	20,000,000	10,072,909	9,349,115
Percentage of total marketable wheat	%	48	66	44	81

The requisite financial accommodation was furnished by the Commonwealth Bank, supported by a guarantee of 3s. 8d. per bushel by the Commonwealth Government. An initial advance of 3s. per bushel was made available to growers on the delivery of their wheat at country stations, and a second advance of 1s. per bushel, less rail freight, has also been made in all the States to 30th June, 1923.

Practically all the marketable wheat in Queensland was received into the compulsory Government pool during 1922–23. Approximately 1,756,000 bushels were pooled, and advances amounting to 4s. 6d. per bushel were paid to 30th June, 1923. Arrangements are being completed for a further advance of 9d. per bushel, and the final return to growers is estimated to approximate 5s. 8d. per bushel, less rail premium of 1½d. per bushel.

CHAPTER XXI.

MINERAL INDUSTRY.

§ 1. The Mineral Wealth of Australia.

3. **Value of Production during 1922, p. 791.**—The following table gives the value of Australian mineral production in 1922 :—

MINERAL PRODUCTION.—VALUE, 1922.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Total.
	£	£	£	£	£	£	£	£
Gold ..	118,359	501,515	378,154	4,693	2,525,811	16,101	540	3,545,173
Silver and Lead ..	2,574,108	1,080	109,350	377	87,692	241,694	..	3,014,301
Copper ..	36,233	..	321,535	73,646	20,379	391,535	798	844,126
Iron ..	251,928	..	..	58,177	..	..	..	310,105
Tin ..	154,698	12,071	99,758	..	10,930	112,407	5,891	395,755
Zinc ..	1,157,458	..	..	..	..	..	..	1,157,458
Coal ..	8,507,946	695,430	840,472	..	381,555	61,016	..	10,486,419
Other ..	150,434	34,870	109,815	194,973	14,745	55,256	2,730	562,823
Total ..	12,951,164	1,244,966	1,859,084	331,866	3,041,112	878,009	9,959	20,316,160

NOTE.—Gold, valued at £4.69267 per fine oz.

CHAPTER XXIV.

POPULATION.

§ 3. Distribution and Fluctuation of Population.

1. Present Number, p. 909.—The estimated population on the 30th June, 1923, together with details of the increase since the preceding year, and since the Census of 1921, are given hereunder :—

AUSTRALIA.—ESTIMATED POPULATION, 30th JUNE, 1923.

States and Territories.	Males.	Females.	Persons.
New South Wales	1,115,787	1,073,592	2,189,379
Victoria	797,623	809,963	1,607,586
Queensland	425,844	379,792	805,636
South Australia	259,652	257,033	516,685
Western Australia	186,203	161,916	348,119
Tasmania	107,294	106,490	213,784
Northern Territory	2,605	1,043	3,648
Federal Capital Territory.. .. .	2,039	1,216	3,255
Total, Australia	2,897,047	2,791,045	5,688,092

The corresponding figures for the whole of Australia at 30th June, 1922, were 2,830,409 males, 2,736,336 females, or a total of 5,566,745. There was thus a total increase during the year ended 30th June, 1923, of 121,347, made up of 66,638 males and 54,709 females. Of this total increase the excess of births over deaths accounted for 84,567, while the excess of arrivals over departures accounted for 36,780. Details for the several States and Territories are as follows :—

INCREASE OF POPULATION FOR THE YEAR ENDED 30th JUNE, 1923.

States and Territories.	Natural Increase, <i>i.e.</i> , Excess of Births over Deaths.	Net Migration, <i>i.e.</i> , Excess of Arrivals over Departures.	Total Increase.
New South Wales	35,785	5,593	41,378
Victoria	20,114	17,111	37,225
Queensland	12,810	9,244	22,054
South Australia	7,152	4,668	11,820
Western Australia	4,928	3,132	8,060
Tasmania	3,729	(a) — 3,248	481
Northern Territory	30	(a) — 42	(b) — 12
Federal Capital Territory	19	322	341
Total, Australia	84,567	36,780	121,347

(a) Excess of departures.

(b) Decrease.

These figures indicate that since the Census of 4th April, 1921, the population of Australia has increased by 252,358, or rather more than a quarter of a million, representing an average rate of increase of slightly more than 2 per cent. per annum.

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